The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOL. LV, NO. 17 CHICAGO, ILLINOIS OCTOBER 22, 1910

CERTAIN POPULAR BUT ERRONEOUS NOTIONS CONCERNING ANGINA PECTORIS*

JAMES B. HERRICK, M.D.
CHICAGO

Severe substernal pain coming on after exertion, radiating to the left arm, lasting a brief moment, yet compelling the patient to remain immobile from the physical suffering and from a mental anguish that overwhelms him with a sense of imminent death—this picture is looked on by all as that of typical, true, cardiovascular angina, and especially when the arteries are found to be sclerotic and the blood-pressure high. A prognosis is made of sudden death in the near future from a recurrence of the paroxysm, a prediction only too often correct.

So indelibly is this image of the phenomena and course of the affection fixed in the minds of many physicians that they are unable to admit any deviation from its details as consistent with this disease. In this way there have become prevalent several notions concerning angina pectoris that are more or less erroneous, chiefly in that they fail to recognize the atypical manifestations.

It is the object of this paper to present some of these views that seem to me erroneous, chiefly because they are too narrow and do not give room for the exceptional case.

Considering the lack of definite unifying knowledge of the pathogenesis of angina pectoris, one is not surprised to find that there is confusion in the interpretation of the symptom-complex. This confusion is seen especially when the attempt is made to separate an organic cardiovascular form from a toxic or from a neurotic type. I have no intention to discuss the necessity or advisability of making such a distinction, but shall limit what I say to the so-called "true angina" of organic cardiovascular origin. This tacitly assumes that a grouping of somewhat similar symptoms on a purely neurotic basis, no matter how closely resembling true angina, is not the real disease; that to this unreal disease the term "neurotic angina" or "pseudo-angina" is not inapplicable. In taking this position one realizes a certain inconsistency in the use of terms, and that one is open to the charge of not being in line with the latest trend of thought, of being at variance with the views of many leading medical men, and of exposing oneself to the shafts of ridicule of such a master of physic and English as Sir Clifford Allbutt. "Either a case is angina or not angina," says MacKenzie. "Pseudo-angina is pseudodiagnosis," says Allbutt. With all of which I agree, but feel that a clinical distinction between true and false is justified on practical grounds.

* Read in the Section on Practice of Medicine of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

DEMONSTRABLE ARTERIOSCLEROSIS, HIGH BLOOD-PRESSURE, AND AORTIC VALVE LESIONS

Since Jenner proved that John Hunter, who died of angina, had coronary sclerosis, the conception of coronary sclerosis as the essential underlying lesion has been deeply rooted. That coronary sclerosis is often associated with sclerotic aorta, roughened aortic valves and wide-spread arteriosclerosis is also well known. From this frequent association has arisen the expectation of finding in all cases of angina evidences of this wide-spread arterial change, with its accompanying high blood-pressure and cardiac hypertrophy. But this, as has been pointed out by many, is by no means always the fact. Arterial change may be wide-spread and the coronaries sclerotic, yet there may be no hypertrophy of the heart and no rise in blood-pressure, the very sclerosis that is probably the cause of the angina producing also, through obstruction to blood-flow, poorly nourished, weakened or fibrous myocardium. Or the sclerotic or atheromatous process may be quite limited, involving only the first portions of the aorta, but encroaching on the coronary arteries. Particularly in syphilis are the changes thus localized to the beginning of the aorta. In these cases the peripheral vessels may be normal.

Even with markedly sclerotic coronary, the peripheral vessels, and aorta as well, may show little or no change from the normal. Such a heart I saw in a man of 60, dying in his first attack of angina, or, rather, in his second, which came on twelve hours after the first. The coronaries were stiff-walled from calcareous deposits, and his heart not large. One may rightly urge the presence of peripheral sclerosis, murmur over the aorta, and large heart as strongly suggesting coincident sclerosis of the coronary, but one cannot exclude such sclerosis in the vessels of the heart or pronounce a cardiac pain as non-anginal because the peripheral vessels are normal.

Not a few seem inclined to discredit the possibility of angina unless the blood-pressure is persistently high, or at least is high just preceding or during an attack. That there is often persistently high blood-pressure is true. It is often true that preceding an attack there may be a rise. In some instances one may predict an oncoming attack because of the rise in pressure. In a case which I was privileged to see, the physician had the opportunity of measuring the change in pressure in the fatal attack. He had just finished reading the pressure, 160 mm. Hg, when the pain occurred and the mercury rose to 190 mm., death occurring before a hypodermic could be administered.

But one must be prepared for normal or subnormal readings. In some of the most serious cases, in fact, there is low blood-pressure, indicating perhaps a weakened myocardium. In a man of 54, with no general arteriosclerosis, I have seen the rough-walled left coronary plugged in its anterior branch with a thrombus,

producing sudden excruciating precordial pain. For the fifty hours that the patient lived the heart tones were barely perceptible, and the peripheral pressure extremely low. But in cases in which there is no such acute and extensive myomalacia cordis as was present in this instance, the pressure may be low for a long time and the patient busy about his work, though interrupted at times by the attacks.

Most physicians regard the existence of an aortic valve lesion of a sclerotic character as tending to strengthen their belief in the organic origin of the painful attacks, that is, such a finding points toward a true angina, and away from a so-called pseudo-angina. The same is true if the arch of the aorta is dilated uniformly, or in circumscribed aneurismal manner. The sclerotic or atheromatous lesion of the aorta or the valves leads one to suspect a similar trouble in the coronaries, or perhaps only at their mouths. And those who, like Allbutt, see in the aortic ring the seat of anginal pains, naturally interpret evidence of anatomic change in this locality as proof of the organic origin of the attack. Much depends on one's conception of the cause and nature of this disease. Some, however, hold so rigidly to the theory of coronary origin that, if aortic regurgitation or aortic aneurism be made out, or if there be strong reason to suspect aortitis, they will not call the seizures anginal, though the pain and other phenomena may be classic in every respect. They speak of such seizures as merely "the pain due to aneurism, aortic regurgitation," etc., but not the pain of angina pectoris; that is, coronary disease. This view, while held by only a few, is too narrow.

NUMBER AND DURATION OF ATTACKS

Another fallacy is connected with the number of attacks. Not a few physicians have been heard to express the opinion in concrete cases that, because the attacks were frequently repeated, they could not be anginal for, they assert, an individual never has more than a few; he succumbs if there are numerous recurrences. This is utterly wrong. Repeated attacks of severe type may occur during periods varying from many days to many months. And it is no uncommon experience to meet patients whose milder attacks—the angina minor of some—are repeated several times in a single day. Neusser mentions a woman with twenty attacks a day. In one patient seen many times I witnessed over a period of three years the sufferings of this disease, there being at times as many as six and eight paroxysms in a day.

The attack is usually brief, being over in a few seconds or a few minutes. But in other instances it is more prolonged. After the acme of pain has been reached, there is a moderation, but still a residual pain, a soreness of skin in the precordia, and a numbness or pain extending down the arms, especially the left, to the elbow or fingers. The patients may suffer, therefore, for many minutes, or the pain may last for hours. In the patient already referred to, the one who had coronary thrombosis, the agonizing substernal pain lasted three hours, though death did not follow until fifty hours. Morison describes a case of coronary thrombosis with anginal pain, lasting twenty-three hours. This patient had previously suffered from milder attacks of angina. Opinions might differ as to the propriety of speaking of this more chronic state as angina, though it has the characteristics of the acute paroxysm, only less in degree, and longer drawn out as to time.

Where the status anginosus exists, one attack is rapidly followed by another, even on the slightest provocation or after no appreciable cause; some pain and soreness persist between the attacks, so that the patient is in a state of continuous pain and suffering, with frequently recurring exacerbations.

EXCITING CAUSE

The exciting cause of the attack is usually exertion, especially rapid walking. Some strange anomalies are at times seen. Thus a man may have an attack that is brought on by the mere effort of walking about the room, while he dresses, or simply by stooping to lace his shoes. After his breakfast he may be obliged to stop two or three times on his way to take his train; yet for the rest of the day he is free, even though he may walk a considerable distance and eat rather freely at luncheon and dinner. One of my patients, in a suburb, could ride a bicycle to the station with fewer seizures than if he walked, though the streets were level and when afoot he never hurried. Another patient, a woman, has for two or three years been unable to walk two blocks without pain, necessitating her stopping to rest or to take nitroglycerin. She can remain for days together free from pain if she sits or lies still. Charles Sumner had attacks that at times seemed to be brought on by some sudden move, as by turning in his revolving library chair. Yet at other times, as when speaking in the Senate, he could be on his feet for hours, with all the mental excitement, bodily activity and gesticulation of earnest debate, and still be free from pain. It is well known that a fit of anger, a breath of cold air, an overloaded stomach, may precipitate a seizure.

These irregularities are to be remembered, and they are here referred to, because the opinion is at times expressed that attacks come on only after exertion; and, on the other hand, that, if an individual with supposed angina is able to walk briskly without an attack, it is proof against the existence of angina. While exertion and the other causes mentioned are the common provocative ones, these causes may produce an attack at one time and not at another, and often no cause can be clearly assigned for the outbreak any more than for some epileptic seizures.

INFREQUENCY IN WOMEN

All agree that true angina is comparatively rare in women, some statistics showing less than 5 per cent. Heberden saw three women in one hundred patients with angina. Undue importance is sometimes attached to the infrequency in women, and one may thus be influenced away from a correct diagnosis. The error is easily understood, too, when in an individual case there are evidences of a strong neurotic taint. The undue excitement, the tendency to introspection and to exaggeration of symptoms, the desire for attention and sympathy, perhaps even the pronounced hysterical manifestations, may easily mislead one to the diagnosis of a functional, neurotic or so-called false angina. No inviolable rule can be given for the sure differentiation, but a study of the cardiovascular condition, the age, the exciting cause, the radiation of pain, the behavior and attitude during rather than after the attack will all be of help. It is certainly a cause for regret and chagrin to diagnose pseudo-angina and in a week or two have the woman die in an attack. In the case of a woman seen by many different physicians, all agreed as to the existence of a cardiac valvular lesion, and all agreed as to the existence of a marked neurotic, even hysterical, element, aggravated by a free habitual use of morphin. There was, however, a wide divergence of opinion as to the organic

basis of the anginal attacks, some regarding them as wholly of the false type. A rest-cure, with breaking off of the morphin habit and marked improvement in every respect, lent color to the theory of pseudo-angina, but the woman died suddenly some two or three years later, as in angina. One has to keep clearly in mind what has been often said, but what is easily forgotten, that the cardiopath is often a neuropath. The hysterical woman may have underlying the nervous manifestations a serious pain-causing disease.

PAIN, UNCONSCIOUSNESS, IMMOBILITY, ETC.

Certain facts concerning the pain itself are worth repeating, for it is easy to have a stereotyped picture in mind, while in reality there are not a few variations.

I have never seen a case that I recognized as angina sine dolore, but since its description by Gairdner, it has been a recognized form, and one cannot question its existence. Not long ago I heard Dr. J. M. Patton describe his experience in being called to the home of a colleague whom he found lying on the couch. In answer to the question as to what was the matter, the reply of the patient was that he did not know, he had no pain, but an indescribable sensation in the cardiac region, and an appalling sense of the presence of death, and "I'm mighty glad to see you," he said. In a minute more he suddenly expired. There was no feeble, rapid, irregular pulse; no dyspnea; no cyanosis; no pain—apparently angina save the pain.

It is surely wrong to state dogmatically that pain, in order to be anginal, must be severe, excruciating, unbearable. There are milder degrees. What is called angina minor must be viewed as in its essence of the same nature as the angina major. In one sense its recognition may be of greater importance than that of the major type, for it may lead to appropriate advice that may prolong life in cases in which were the disease unrecognized, a faulty mode of life might lead to early death.

The most typical radiation of pain is to the left side of the neck and down the left arm. But one must be prepared for odd radiation. The radiation is often down the right arm. In one of Morison's patients the right arm radiation was associated with sclerosis of the right coronary only. The pain may run down both arms. It often goes down the ulnar side. It may stop at the elbow, the wrist, or run to the little finger. Pain may start in the fingers, run up the arm, and finally centralize at the heart, seemingly a centripetal rather than centrifugal course. Pain, numbness and tingling may be complained of in the intervals between the attacks, and may be regarded as rheumatic and articular in origin. Pain to the jaw, to the ear, to the back may be described. And particularly confusing are the cases in which such odd radiations as to the epigastric, lumbar, renal and testicular region are seen. Tenderness of the skin, as described by Head, may at times be made out. One of my patients, a woman, often has most profuse salivation with the substernal pain, that radiates to the left shoulder and arm. MacKenzie mentions this same salivation in his experience.

Unconsciousness, though unusual, is yet seen at times. On two occasions I have known a sufferer from angina to become unconscious, once at the climax of a paroxysm. Osler and others mention the same occurrence.

Immobility is a characteristic feature. The patient is afraid to move for fear the pain will be aggravated. He sits or stands motionless, at times almost statue-like; he will not lie down. Yet there are exceptions to these rules. Charles Sumner often walked about his library during an attack. An old colored man whom I recently had under my care in the County Hospital usually lay down, on the sidewalk or porch, or wherever he was taken, until the attack was over. His sudden death, two weeks after describing to me and to the class in clinic the typical manifestations of the disease, and the finding of sclerosed aorta, aortic valves and coronaries, confirmed the diagnosis of angina. This is, I think, the only patient I have seen who by choice would lie prone during an anginal seizure, though I have several times seen patients in a half-sitting posture, or have had such position described to me as the one assumed. A woman of 45, who had definite loud basic murmur, apparently due to roughened aorta and aortic valves, would, during the pain of angina, get on her hands and knees in bed. She was neurotic and admitted that there was a hysterical element in her case, but insisted that the pain was real and that this position gave her the greatest relief.

Once or twice I have had the diagnosis of angina questioned because of the prominence of eructation or vomiting. Flatulence or vomiting may be marked. At times the attack ceases with the belching of gas or the raising of the contents of the stomach. That a stomach distended with gas or food may cause epigastric or precordial distress is a well-known fact, but it should also be remembered that true angina not infrequently follows a hearty meal, or is accompanied by striking gastric symptoms.

PROGNOSIS

A word about prognosis. There is in some quarters the opinion that the disease is not only inevitably fatal, but that death is sure to follow in a short time, or after two or three attacks. There is surely good reason for viewing this condition as one of extreme gravity. Death, and often sudden death, is the common result. But it is also worth noting that the fatal termination may be deferred for years and, exceptionally, complete recovery seems to ensue. If one includes under the head of angina pectoris the toxic, as for example, tobacco anginas, and the neuroses with precordial angina-like pains—the so-called pseudo-anginas—the mortality percentage, while high, would not be so startlingly large. But even excluding the neurotic forms and limiting the statement to the true cardiovascular types, the mortality is not 100 per cent., as some think; and even in the fatal cases death may be postponed for many years. In a paper recently presented to the Chicago Medical Society, Dr. Forchheimer of Cincinnati cited one of his cases, in which the first attack had been seventeen years before death. Dr. Billings had seen a patient live fifteen years after the first paroxysm. A physician whom I cared for had his first severe and nearly fatal angina seven years before his fatal attack. Morison describes a case in which the pains recurred at intervals for seven years. Stokes had a case in which for ten years the patient suffered from attacks of excruciating severity. John Hunter had attacks for twenty years.

The recognition of the malady, the regulation of the mode of life to that most suited to the cardiovascular condition, involving, as it often does, change in diet and habits of work, the proper use of remedial drugs; in a word, appropriate treatment may materially alter the prognosis. The condition of the heart and vessels as to aneurism, valvular disease, general sclerosis, myocarditis and fatty changes, must determine to a marked degree the length of life. And so, too, does the condition of the kidneys.

NITRITES AND DIGITALIS

I wish to refer briefly to certain fallacies concerning the use of nitrites and digitalis.

The nitrites have, especially of late, been held by some in less repute than formerly, because they fail completely in some instances to relieve or ward off the attacks. Others seem so convinced of their efficacy that, when in a case of supposed angina the nitrites fail to relieve the suffering, and to relieve it promptly, they conclude that they are dealing with something different from true angina. Now, the truth seems to be that nitrites in some cases give most prompt, marvelously prompt relief. The testimony of many physicians is available on this point. It is hard to understand, then, how some good men—Romberg, for example—regard this remedy as either of no benefit or of very insignificant value, at least during a seizure. Unless convinced by repeated trials as to its uselessness in the attacks, no patient should fail to keep in his pocket either the pearls of nitrite of amyl or the pill or tablet of nitroglycerin, gr. 1/100 to 1/50. Some attacks are surely cut short by the use of these remedies, and often the patient has a slight warning of the onset, and the timely use of the drug may prevent a paroxysm.

No matter how strong the prejudice against the use of digitalis in cardiac hypertrophy and general arteriosclerosis may be; no matter what may have been said against its employment in weakened myocardial states, there can be no question that in some cases of angina—not easily described, either—this drug does more good than all the iodids or nitrites.

SUMMARY

These views may be summarized by making the statements as a series of negations:

1. With "true," organic cardiovascular angina pectoris there cannot always be made out peripheral arteriosclerosis, cardiac hypertrophy and high blood-pressure.

2. The finding of aneurism or lesion of the aortic valves does not exclude angina, but rather argues in its favor.

3. The attacks are not always few in number and brief in duration; they do not occur solely after exertion.

4. While the prognosis is grave, life is not necessarily limited to a few months.

5. The disease is by no means to be excluded because the symptoms are found in a woman, even in a nervous or hysterical woman.

6. The pain is not necessarily severe; it may be mild or even lacking; its radiation is variable.

7. The statement that the patient is always conscious, that he is always immobile and erect must be modified so as to read "usually" instead of "always."

8. Eructations or vomiting during an attack do not argue conclusively against the cardiovascular origin of the angina.

9. It is not correct to look on the nitrites as of no benefit in relieving symptoms; nor, on the contrary, is one justified in concluding that a case unrelieved by nitrites is not angina.

10. Digitalis is not necessarily contra-indicated; it is often of very great value.

Closer observation of the atypical as well as the typical cases, with collocation of the results with those of anatomic and experimental studies will lead to unifying knowledge concerning the pathogenesis of this disease, to greater precision in its recognition, and to more appropriate treatment.

150 Michigan Boulevard.

ABSTRACT OF DISCUSSION

DR. JOSEPH L. MILLER, Chicago: If we followed the statements made in text-books regarding angina pectoris, the diagnosis of this disease would frequently not be made. A statement often made is that patients suffering from angina pectoris always remain quiet, whereas, many patients with typical attacks of this disease will move about. I believe that the term "pseudo-angina" should be entirely abandoned. Patients with symptoms resembling angina pectoris, in whom we can exclude an ordinary neuritis, should be considered as suffering from true angina. I do not believe that the value of digitalis in angina pectoris is fully appreciated; I think that there are many patients who receive permanent benefit when taking this drug, the attacks recurring less frequently. It has been shown experimentally that a much more extended ligation of the coronary artery may be made without serious consequences when the animal is under the influence of digitalis or strophanthus, and I think that the same holds true in human beings. There may be obstruction of a coronary artery with less serious consequences if the heart is under the influence of digitalis.

DR. GEORGE W. MCCASKEY, Fort Wayne, Ind.: I had under observation last year a patient who had anginous attacks occurring sometimes during exercise, but the majority occurred during the night. The patient awakened in the night with this precordial pain and a sense of approaching death, etc. These attacks were as typical during the night as during the day. This patient referred to finally died and came to autopsy. The heart was exhibited to the Fort Wayne Medical Society, and showed both coronary arteries extensively involved. There is a group of cases which has interested and troubled me very much, in which this precordial pain is more or less persistent, with occasional severe exacerbations. Whether such cases should be placed in the group of angina pectoris is a question that must be answered according to the definition of angina pectoris. But there are some cases, indistinguishable by their symptoms, in which there is serious organic disease and in which the heart is able to adjust itself to the new conditions. If the nutrition be improved, some of these patients will make a relative recovery.

I recall the case of a patient, aged 60, who came to me about four years ago, suffering from severe typical attacks of angina pectoris. His family physician, on several occasions when called in to attend him, thought he would die. I placed him on the usual treatment. He was given the nitrites, small doses of digitalis, and iodids. This patient made a complete symptomatic recovery. I saw him within the last six months and he apparently is in good health.

Another patient that I now have under observation has more or less persistent pain. This man is very intelligent and cooperates with me in observation of his case. He says that he never was free from a sense of constriction, but what annoys him most is this pain, which at times is almost continuous; at other times he has a sense of pressure. If he exercises he brings on an attack. He has no paroxysms during the night. Still another case of an entirely different type was in a boy of 11, who, about 3 years ago, had what apparently were typical attacks of angina pectoris. The precordial pain lasted a few minutes and the attacks occurred mostly during the night, though they also occurred at times after exercise. One would not expect any trouble with the coronary arteries in a boy of this age; he made a complete recovery and is well to-day.

I think that the majority of these cases occur about middle life or later, and are due to changes in the coronary arteries. But what causes the pain in angina pectoris? I think there must be some interference with the circulation in the heart muscle or disturbance of the neuromuscular mechanism of the heart. This is certainly far from a satisfactory explanation, but is the best we have at present.

DR. GUSTAV BAAR, Portland, Ore.: Some years ago, Billroth said that in cases of angina pectoris he gave one-half grain of digitalis leaves every day and that the patients could then keep at work. Since then, I have employed this agent in this form and dosage, and with very good results. At the same time I must caution against the promiscuous

use of digitalis in heart disease. I have seen a number of "bronchial asthma" patients in collapse—cold extremities, imperceptible pulse, etc. In these cases I have injected 1 mg. of strophanthin, intravenously. A young woman, after injection of this amount of strophanthin, within three minutes displayed bounding and rapid pulse and is alive to-day. Through my experience in this case I was much encouraged in the use of strophanthin. Some time later, I was called to see a patient with "angina pectoris," who had been under the digitalis treatment for three years. I found this patient in collapse and injected 1 mg. of strophanthin; after injecting the drug I left, but was called back at the street corner: the woman was dead. Undoubtedly, the death was due not to the angina pectoris, but to the strophanthin. Since then, I have given up the use of strophanthin in any case of arteriosclerosis, a condition which is usually associated with angina pectoris.

DR. SCOTT P. CHILD, Kansas City, Mo.: I should like to report a case of angina pectoris in support of Dr. Herrick's contention that many cases are atypical. The patient was an active Episcopal bishop of western Missouri, aged 70, height 6 feet 2 inches, weight 180 pounds. While attending to the duties of his diocese, and following an evening meal, he ran upstairs and was immediately taken with what he termed the most severe pain he ever suffered. The pain, beginning at the base of the heart, back of the sternum, ran up into the neck and jaws of both sides and down both arms to the finger tips. The pain lasted an hour and a half, being relieved only by a hypodermic injection of morphin. During the attack of pain the patient suffered from intense cold, which was followed by profuse perspiration. Two days following the attack, the pulse was quite regular, the rate varying from 120 to 130; the blood-pressure in the right arm was 140 mm. Hg, that of the left 126 mm. Hg. This patient has been under my observation for two years (no previous attack suffered), with a well-established myocardial insufficiency, the heart being enlarged well beyond the nipple line and down to the sixth interspace. So far, no valvular signs have developed. This patient for several years has had evidence of interstitial nephritis, with a constant albuminuria, hyaline, and frequently granular casts. Two days following this attack of angina, the urine revealed 0.5 per cent. of albumin and numerous hyaline and granular casts. At the end of a week, with rest in bed and a regulated diet, the pulse was down to 92 and regular, the blood-pressure was low, and the urinary findings very much improved.

DR. JOHN A. WITHERSPOON, Nashville, Tenn.: It is unfortunate that so many physicians are looking for such cases of angina pectoris; they look for cases of such severity that the patients are made perfectly quiescent, with fixation of the body, cyanosis, and so forth. They do not seem to realize that there may be cases of angina pectoris, with intermittent attacks of mild character, which have been threatening the patients for years. I learned long ago that the pulse in angina pectoris was unreliable; I have found a low pulse and a rapid pulse in bad cases, as well as in mild cases of this disease. If these cases are properly conducted and properly managed between the attacks the attacks will become less severe. Like Dr. McCaskey, I like to give the iodids with the digitalis.

I doubt very much the diagnosis of angina pectoris made in the case of the boy of 11 years; I have yet to see a true case of angina pectoris occurring in a patient so young. We are likely to get an increase in the blood-pressure, with evidences of an accentuated second sound of the heart, but no evidence of atheroma of the coronary arteries. Many of these cases may be explained and will be found not to be due to angina pectoris. The nitrites act happily in some cases, but when most needed they most often fail to give relief. It is especially in the bad cases that the nitrites seem to fail us.

DR. ALLEN A. JONES, Buffalo: We cannot always judge of the condition of the coronary circulation in the heart from the condition of the peripheral circulation as we see and feel it. I have now under observation a patient with typical attacks of angina pectoris. He has suffered any number of attacks; he is an individual in middle life, and pulse, blood-pressure, and heart are practically normal. The pain may be present in an unusual situation, and not in the classical situation, precordial and running to the left shoulder and left arm, or to the wrist and thumb. In a paper read at a session of this Association in Atlantic City some years ago, I called attention, in discussing "Abdominal Symptoms of Thoracic Disease," to the fact that we might encounter epigastric pain as well as cardiac. The pain may be typically epigastric, and may be called gastralgia; in fact it often is. Between the attacks of angina pectoris it is not an uncommon experience to find individuals complain bitterly of gastric symptoms, and more especially of a collection of gas in the stomach, a "pneumaptosis," the pressure of which on the diaphragm frequently leads to an attack. I think that one should exercise great caution in his choice of cases; in a patient with high blood-pressure, with cardiac hypertrophy and with a competent heart, digitalis is not to be used except under extreme watchfulness. On the other hand, given a case of angina pectoris with opposite conditions, in a frail and spare individual with low blood-pressure, and with attacks often coming on after exercising, then the administration of small doses of digitalis over a long period frequently does good.

DR. JAMES B. HERRICK, Chicago: The question of treatment I purposely omitted from my paper, except the few words concerning digitalis and the nitrites. I agree, however, with what has been said in regard to the use of the iodids; they certainly are of great benefit.

THE VISCERAL ANESTHESIAS OF TABES DORSALIS IN RELATION TO THE DIAGNOSIS OF ACUTE INFLAMMATORY CONDITIONS IN THE ABDOMEN

WITH AN ILLUSTRATIVE CASE *

LEWIS A. CONNER, M.D.
NEW YORK

The value of pain as an element of safety in the body economy and the disastrous effects of the absence of the normal sensibility of a part are illustrated in the destructive ophthalmia which so frequently follows a lesion of the trigeminal nerve, and in the familiar "Charcot joint" of tabes. Although trophic disturbances probably have some part in the development of both of these conditions the absence of the normal sensibility seems to play an important rôle in determining the progressive and destructive character of both processes. Slight injuries pass unfelt and unheeded. In the case of the tabetic arthropathy the absence of pain results in the absence of all reflex protective contraction of the muscles controlling the joint movements; the continued free use of the limb increases constantly the existing damage and there ensues a gradual, painless disintegration and destruction of the joint. A recent experience has brought home to me the fact that sensory disturbances in tabes may, indirectly, lead to grave damage to the body in ways other than by the development of "Charcot joints" or perforating ulcers of the foot. The following case illustrates this fact:

FATAL PERFORATIVE APPENDICITIS IN A TABETIC WITH COMPLETE ABSENCE OF PAIN, TENDERNESS AND MUSCULAR RIGIDITY

Patient.—A brakeman, aged 42, was admitted to the medical service of the New York Hospital on August 14, 1909, with an acute febrile attack of three days' standing. His history as given at that time was as follows: Family history is un-

* Read in the Section on Practice of Medicine of the American Medical Association, at the Sixty-first Annual Session, held at St Louis, June, 1910.

important. The patient had measles in childhood; malarial fever twenty years ago; chancre seventeen years ago; treatment for a few weeks only; indefinite secondary symptoms; gonorrhea twice; last time four years ago. He was a heavy drinker up to eight years ago; since then has used no alcohol. For the past year has had some difficulty in controlling his bladder and rectum and has had frequent sharp, darting pains in the legs. About four weeks ago he began to have a "weak, tired feeling" in the legs; could not feel distinctly with his feet and would stumble when attempting to walk in the dark. Three days ago he began to be very feverish. Since then he has had several shaking chills and some profuse sweats. There has been no regularity in the appearance of the chills; no pain; no other symptoms except prostration and malaise.

Physical Examination.—Male subject, large frame, poorly nourished. Skin and mucous membranes of good color. Admission temperature 104.6 F., respiration 24, pulse 108.

Eyes: Left pupil smaller than right. No reaction to light in either pupil. Prompt reaction in accommodation. Tongue moist and clean. Superficial lymph-nodes not enlarged.

Pulses: Equal, regular, rapid, of good size and force, moderate tension. Arterial walls slightly thickened.

Heart: Apical impulse diffuse. Seen and felt in fourth and fifth intercostal space 13 to 14 cm. to left of mid-line. Right border of relative dulness not satisfactorily determined; left border 13 cm. to left of mid-line. Heart sounds clear except at apex, where a short, soft systolic murmur is heard.

Lungs: Percussion gives everywhere a somewhat short, "wooden" resonance. Lungs voluminous. Respiratory murmur is everywhere vesicular. No adventitious sounds.

Abdomen: Flat, soft, thin-walled. No rose spots. Liver dulness extends from sixth intercostal space to free border of ribs. Edge of spleen can be indistinctly felt just above the costal border. In the right iliac fossa a soft, elastic, elongated and freely movable mass (cecum?) can be distinctly felt through the soft, relaxed, abdominal wall. In the left iliac fossa a similar, somewhat smaller object can be felt. Neither mass is tender on palpation. No tender points can be elicited anywhere in the abdomen, nor is there anywhere muscular rigidity.

Genitals: Small scar on glans.

Extremities: A number of pigmented, depressed scars over both shins. Knee-jerks and Achilles jerks cannot be elicited. Plantar reflex absent. Marked diminution in tactile and pain sensibility over feet and legs.

Course of Disease.—On August 15 the patient vomited several times. The temperature continued high and irregular. The mind was clear. The patient complained only of the fever and general malaise; required catheterization. Urine contained a trace of albumin and a good many hyaline and granular casts but no pus. Leukocytes were 9,700; polymorphonuclear cells 83 per cent.; lymphocytes 17 per cent.; hemoglobin 85 per cent. The Widal test was negative. There were no malarial plasmodia. The abdomen was soft, flat and entirely free from tenderness.

During the next six days the patient's condition grew slowly but steadily worse. The temperature fluctuated between 100 and 104 F.; the respirations between 24 and 32, and the pulse gradually grew more rapid and feeble. The patient continued to vomit frequently, the vomited matter consisting usually of bile-stained fluid. The bowels were readily moved by laxatives or enemas. The patient complained of no pain whatever, and frequent examinations of his lungs, heart and abdomen failed to supply any clue to the diagnosis. The Widal test was repeatedly negative. Two examinations of the scanty sputum failed to reveal tubercle bacilli. The urine gave no evidence of a pyelitis or cystitis. The soft elastic mass in the right iliac fossa seemed rather to diminish in size, could be readily displaced under the finger and was never tender to pressure or manipulation. It seemed to be only the normal cecum felt through an unusually thin and relaxed abdominal wall.

The stomach contents, expressed after an Ewald test breakfast, showed nothing abnormal. Examination of the stools was negative for blood, mucus or ova. Rectal examination revealed nothing abnormal.

On August 17 the leukocytes numbered 18,800 and the percentage of polymorphonuclear cells was 83. A blood culture taken on this day remained sterile. On August 20, the leukocytes were 37,800 and the polymorphonuclears 92 per cent. The abdomen at this time was somewhat tympanitic but was free from muscular rigidity and tenderness. The area of liver dulness remained unchanged. The heart sounds also had not changed. A few crackling râles could be heard at the bases of both lungs; the tongue was dry and brown.

It was evident that the patient was suffering from some severe septic condition but the nature and site of the trouble was still altogether obscure.

August 21, the patient failed rapidly, passed into a stupor, developed pulmonary edema and died at 9 p. m. In the light of the subsequent autopsy findings it is to be regretted that a systematic examination of the sensibility of the trunk should not have been made, but our attention was centered on the acute, febrile condition which seemed to be quite unrelated to the antecedent tabes.

Autopsy.—Fifteen hours after death. Dr. Symmers (condensed report). On opening the peritoneum about 500 c.c. of milky fluid escaped. The peritoneum is diffusely opaque, swollen, edematous and in many places covered with an abundant fibrinous exudate. The serosa of the intestines is opaque and the intestines are in many places matted together by fibrinous exudate. In the appendix a round perforation, the size of a 10-cent piece, is found. The edges of this are necrotic and covered with fibrinous exudate. A probe passes directly into the lumen of the appendix, the mucous membrane of which is necrotic and discolored.

Pleura and pericardium normal.

The heart is moderately increased in size and flabby. The endocardium is in good condition. The aorta is large, the intima presents many yellowish plaques alternating with pale, hyaline, wrinkled areas. Heart muscle shows post-mortem changes.

The lungs show only emphysema and edema.

The spleen is increased in size, soft and friable. The Malpighian bodies are not visible.

The kidneys are moderately increased in size. The capsule is thin, strips readily and leaves a smooth, pale surface. Cortex and medulla are well differentiated. Cortex is broad, swollen, opaque. Markings very indistinct.

Liver considerably increased in size. Cut surface smooth, yellowish in color and very friable. Markings indistinct.

Stomach presents the lesions of atrophic gastritis.

Intestines show little change.

Bladder and prostate fairly normal.

The spinal cord shows considerable grayish discoloration, involving the posterior and lateral tracts, which is chiefly confined to the dorsal region.

Microscopic Examination (Dr. Schlapp).—From the sacral region up into the upper part of the dorsal there is a very marked degeneration involving practically the whole of the posterior columns, showing that the root zones in the dorsal region were involved as well as those in the lumbar and sacral region. The fibers in the cornucommissural tract are partly normal as are also a few fibers in the root zones. The root zones and the column of Burdach are intact in the cervical region. In both of Clark's columns the fibers are missing. On one side of the cord most of the cells are missing and those that are present show an abnormal condition in that they are very much smaller than is the normal cell in Clark's column. The cell-body has shrunken, the nucleus has also shrunken and most of the cells in both of Clark's columns contain a large amount of pigment. The cells in the anterior horn seem to be normal except that they contain quite an amount of pigment. The fibers in the posterior nerve-roots are almost entirely degenerated. The anterior nerve-roots throughout the sections of the cord are normal with the exception of a small bundle on each side which shows a marked degeneration. This degeneration, however, is sharply confined to this small bundle of fibers. The lesion extends up to the nucleus of Goll and Burdach, confining itself more or less to the column of Goll in the cervical region.

Here, then, was a man in good health, except for the rather mild symptoms of tabes, in whom an acute appen-

dicitis developed, progressed to perforation and a diffuse peritonitis and ended in death, without there having been at any time spontaneous pain, tenderness or protective muscular rigidity.

Instances of the almost complete absence of these three symptoms in the peritonitis which follows the perforation of a typhoid ulcer are not very rare, but they occur only in patients showing profound prostration and apathy as a result of the severe intoxication of the primary disease. In the present case, on the other hand, the appendicitis developed in a man in his usual health and with an alert mind and a clear sensorium. Under these circumstances it can hardly be doubted that the explanation for the absence of these three cardinal symptoms must be sought in the sensory disturbances of the tabes.

DISTURBANCES OF VISCERAL SENSIBILITY IN TABES

Disturbances of visceral sensibility in tabes manifest themselves in (1) the well-known painful "crises" of the stomach, intestines, bladder, larynx, heart, etc., and (2) a loss or diminution of the normal sensibility of certain of the viscera.

That such organs as the bladder, urethra, rectum and testicle may sometimes become anesthetic or analgesic has long been recognized. Gowers,[1] writing twenty-five years ago, notes the occasional loss of testicular pain, and adds that "the anesthesia may extend to the viscera when the trunk is involved. In consequence of the loss of sensation grave injuries to the limbs, such as burns, may be unperceived, and visceral disease may be unattended with the customary pain. Pleurisy, for instance, may be absolutely painless."

In recent years the subject of visceral anesthesia in tabes has received much attention from the French writers. It has been shown that complete anesthesia of both testicles occurs in about half of the cases and incomplete anesthesia in many more.

Normally, deep pressure or blows on the epigastrium cause a peculiar, painful sensation, with distress, collapse and sometimes even death. In about 20 per cent. of the cases examined this sensitiveness was completely lost.

In many cases there is a disappearance of the pain and distress usually produced by deep pressure on the trachea.

The pain occasioned by pressure on the globe of the eye and on the mamma is also frequently lacking.

Carrez,[2] who has reviewed the whole subject of the visceral anesthesia in tabes, concludes (1) that there exists no connection between the enfeeblement or abolition of the deep sensibility, testicular, mammary, epigastric, tracheal, ocular; and the superficial analgesia or anesthesia and (2) that there is no necessary relation between the deep analgesias and preexisting painful crises.

THE NATURE OF VISCERAL PAIN

Although it seems clearly established that in locomotor ataxia there is frequently a complete loss of the normal painful response to irritation of certain of the viscera, the mechanism by which, under normal conditions, visceral pain is produced is by no means well understood.

It is a fact familiar to physiologists and surgeons (see Lennander[3]) that such organs as the heart, stomach, intestines, liver, gall-bladder, uterus, etc., are usually entirely insensitive to procedures (cutting, pinching, burning, etc.) which in the superficial tissues would cause severe pain; and it has always been difficult to harmonize this fact with the every-day experience that in disorders of these viscera pain is a common symptom. Mackenzie[4] has recently offered a hypothesis to explain this paradox, and supports it by many interesting facts. He believes that the pain excited by disturbances in the viscera is due, not to the propagation of true sensory impulses from the viscera themselves, but to the reflex stimulation of the cerebrospinal nerves supplying the tissues overlying these viscera; in other words, that the pain and tenderness are felt, not in the organ itself, but in the tissues of the thoracic or abdominal wall over it. Afferent impulses passing from the viscus along the sympathetic fibers to the cells of the spinal cord excite there the neighboring centers of the sensory and other cerebrospinal nerves. "If a morbid process in a viscus gives rise to an increased stimulus of the nerves passing from the viscus to the spinal cord, this increased stimulation affects neighboring centers, and so stimulates sensory, motor and other nerves that issue from this part of the cord. Such stimulation of a sensory nerve will result in the production of pain referred to the peripheral distribution of the nerve whose spinal center is stimulated, so that visceral pain is really a viscero-sensory reflex. If the increased stimulation affects a motor center, then a contraction of a skeletal muscle results, and thus is produced the viscero-motor reflex."

This view of the nature of the pain excited by visceral irritation accords well with the familiar facts that such pain is often felt far beyond the boundries of the affected organ, and that there is often an associated hyperesthesia or tenderness of the skin and underlying tissues. In angina pectoris, for example, not only is the pain often felt in one or both arms but there is frequently also hyperesthesia of the chest wall and of the inner surface of the painful arm.

If this theory of the nature of visceral pain is correct (and there is much evidence to support such a view) it is obvious that the absence, in tabes, of the normal painful response to visceral irritation might be explained by assuming a destruction either of the sympathetic fibers bearing the afferent impulses from the viscera to the spinal cord, or of the spinal centers of the corresponding sensory cerebrospinal nerves. In the case cited here a lesion of the sensory cells of the cord alone would not, indeed, account for the conspicuous absence of muscular rigidity.

A lesion of the sympathetic fibers with interruption of the afferent impulses to the cord would, however, explain the absence both of sensory symptoms and of the reflex muscular rigidity. Is there evidence that such lesions of the sympathetic fibers occur in tabes?

LESIONS OF THE SYMPATHETIC IN TABES

Little was known concerning the condition of the sympathetic system in tabes until Roux,[5] in 1900, published his investigations on that subject. In all of the seven cases of tabes examined he found atrophy of a large proportion of the small myeline fibers in the cervical, thoracic and abdominal sympathetic trunks, whereas in ten subjects dead from various other diseases no such changes could be found. He believes that he is justified in concluding that this destruction of the small myeline fibers is a special pathologic condition of tabes, and that this lesion is responsible for the disturbances

1. Gowers: Diseases of the Nervous System, i, edition 3, p. 454.
2. Etude clinique de quelques analgésies viscérales profondes dans le tabes, Thesis, Paris, 1903.
3. Observations on the Sensibility of the Abdominal Cavity, Translated by Baker, London, 1903.
4. Symptoms and Their Interpretation, London, 1909.
5. Les lésions du système grand sympathétique dans le tabes et leur rapport avec les troubles de la sensibilité viscérale, Thesis, Paris, 1900.

of visceral sensibility in that disease. In this view he has the support of Déjerine and Thomas.[6]

In the case recorded here no examination of the sympathetic system was made.

Whatever may be the true cause of the disappearance of visceral sensibility in certain cases of tabes, the fact that such visceral anesthesia does sometimes occur seems to be well established. That this fact has a practical application is evidenced by the fate of the patient under consideration, whose life was lost because of the failure to recognize an acute inflammatory process in the abdomen, demanding immediate surgical relief, which under ordinary conditions would have been only too obvious.

Concerning the frequency with which the abdominal viscera, in tabes, lose their normal, painful response to visceral irritation we have at present no data. It is known that complete loss of testicular pain is found in about half of the cases and a loss of "epigastric sensibility" in 20 per cent. or more. If the lesions of the sympathetic trunks found by Roux are as frequent as his investigations seem to indicate, it is not unlikely that disturbances of visceral sensibility in tabes may be much more common than has been supposed.

Concerning the means of recognition of such anesthesia of the abdominal viscera little can be said. Carrez concludes that there is no relation between the disturbances of visceral sensibility and of that of the overlying skin. The absence of testicular pain and of that produced by deep pressure on the epigastrium would at least suggest that there might be similar sensory disturbances in the abdominal viscera.

SUMMARY

The purpose of this report is to direct attention to the fact that in locomotor ataxia a loss of the normal sensibility of the viscera sometimes occurs, and that in such cases acute inflammatory diseases of the abdomen, such as appendicitis or peritonitis, may develop and run their course without at any time presenting any of the three symptoms of pain, tenderness and muscular rigidity. The loss of painful response to visceral irritation in tabes probably depends on a lesion of certain of the sympathetic fibers passing between the affected viscera and the spinal cord.

53 East Forty-Ninth Street.

ABSTRACT OF DISCUSSION

DR. LAWRENCE LITCHFIELD, Pittsburg, Pa.: I should like to ask Dr. Conner whether there was distention of the abdomen in the later stages of the man's illness, and, further, I should like to emphasize the point which he did not bring out sufficiently, that there was no relation between the superficial sensory nerves and those of the deeper structures. Within the past week I have seen a case of Pott's fracture in a tabetic, a man about forty-two years old, a syphilitic, who had been walking on his broken leg apparently for about two weeks before seeking advice. He had no anesthesia of his feet, he had no analgesia, he had barely appreciable hypalgesia of feet and limbs. He had good joint sense. Manipulation of the fragments elicited no pain. There was excessive swelling, which subsided after rest, with the application of icebags, after which the fragments were brought into alignment without the slightest sensation of pain.

DR. JOHN H. MUSSER, Philadelphia: It is one of the tragedies of appendicitis that it may frequently occur without either pain or tenderness or reflex spasm, and I have observed, in common with others, absence of these phenomena. Certainly, I have seen a number of these cases in various periods of life that I feel bound to say were not attended by or accompanied by locomotor ataxia. I am not stating this to disprove the statement of the author of the paper. I merely wish to emphasize the fact that these symptoms may be absent, and particularly is this the case in the gangrenous forms of appendicitis, in which, on account of the intensity of the infective agent, there has been an absolute cut-off of the nerve paths, consequently bringing about an absence of tenderness and an absence of reflex spasm. The one case that comes to my mind at the present time is that of a healthy adult who had various attacks. At first, the usual preliminary characteristics of slight gastro-intestinal disorder ensued, with vomiting, some slight distention, a little pain, slight fever and then disappearance of symptoms in forty-eight or sixty hours, no abdominal reflexes, no tenderness, no pain. The man was quite an athlete and amused himself by contracting his own abdominal muscles in order to show us that he was absolutely free from pain. Notwithstanding the fact that we urged operative procedures, he refused until the onset of symptoms of peritonitis in two or three days, which were then characteristic. The toxemia was sufficient to carry him off inside of forty-eight hours, notwithstanding the fact that we had an operation and found that he had a gangrenous appendicitis. The only serious symptom that he had was that due to distention of the abdomen. Of course, the peritonitis was recognized by the other phenomena of disease.

DR. C. F. HOOVER, Cleveland: The dissociation of sensory percepts in tabes brought out by Dr. Litchfield, recalls to me a similar experience with a patient with Pott's fracture which was perfectly painless. The man could perceive the vibration of the tuning fork perfectly well. If the fragments were rubbed together he would say "I can feel a grating, but can feel no pain."

DR. LEWIS A. CONNER, New York: The patient had, in the last two or three days of his illness, moderate distention, although the abdomen still remained soft. Of course, as Dr. Musser says, cases of appendicitis do sometimes occur, especially in children, in which the usual symptoms of pain, tenderness and muscular rigidity are almost entirely lacking; but, in my experience at least, some one or other of these symptoms has always appeared at some time in the course of the disease. In the case under discussion, it was the complete absence of these symptoms throughout the entire illness that made it seem so remarkable.

6. Maladies de la moelle épinière, Nouv. traité de méd. et de thérap., 1909, xxxiv, 588.

TEACHING THE PRINCIPLES OF SURGERY*

MARTIN B. TINKER, S.B., M.D.

Assistant Professor of Surgery, Cornell University Medical College.

ITHACA, N. Y.

The surgical practice of twenty-five years hence will be what the surgeons of to-day make it, but the teachers of our medical schools cannot accomplish needed reforms until the members of the profession as a whole recognize the importance of such changes and give their support. When we consider the conditions in medical education twenty years ago—no preliminary requirements for medical study, a two years' course and little clinical and laboratory teaching—we realize how much has been accomplished. The higher place of the profession in public regard, better medical care for our own families and friends, larger fees, with the increased comfort and pleasure in living that they bring, have resulted from the efforts of the veteran leaders in the profession of to-day. These changes have not been brought about in a day, but are the result of long-continued and united effort. There is no possibility of standing still; we must advance or

* Read in the Section on Surgery of the American Medical Association, at the Sixty-first Annual Session, at St. Louis, June, 1910.

fall back. It is difficult or impossible to influence the work of the older members of the profession. Our chief hope for better things lies in more efficient training of the students who are to make up the body of practitioners ten years from to-day.

SOME FAULTS OF PRESENT SURGICAL TEACHING

One great fault of present-day teaching is that too little consideration is given to the relative value of what is taught. In practically all of our medical colleges surgery is taught as if all the graduates were to become surgeons. In much the same way instruction in nose and throat, eye and ear, or in anatomy, is given as if our medical graduates were all to be specialists. Relatively few graduates will actually practice major surgery, yet in several schools the students are taught to perform gastro-enterostomy on animals, in many cases apparently to the neglect of instruction how to treat a carbuncle, felon or lacerated wound, which every graduate, whether a surgeon or a general practitioner, should know how to handle. This is true of many other of the common surgical diseases and injuries, which are more or less neglected while the students are taught the technic of major operations which most of them will never perform. It seems almost unnecessary to insist that medical students should be taught most thoroughly those things which all practitioners should know, whether they specialize in surgery or not. Among these important fundamental topics may be mentioned anesthesia, antisepsis, the arrest of hemorrhage, more thorough training in surgical diagnosis, symptomatology and prognosis, and the treatment of common forms of surgical disease and injury. Such men as are ambitious to specialize in surgery should give themselves the years of training in hospitals and as assistants to experienced surgeons which alone will fit them to undertake major surgery safely.

The clinical teaching of to-day has undoubtedly many advantages over the strictly didactic teaching of former years, but there is still too much teaching at long range. A clinical lecture before an amphitheater full of students too far away really to see anything is not necessarily a better form of teaching than the didactic lecture; the subject is far less likely to be well thought out and to be clearly and systematically presented. In both the general clinic and section teaching there is always the temptation to present the unusual and rare conditions, conditions which interest the teacher, to whom the ordinary disease and injury are commonplace. As a result of this tendency many of our present-day graduates are quite as likely to be better posted on the latest technic of blood-vessel suture or brain surgery than on the diagnosis of appendicitis or gall-stones, to say nothing of the treatment of leg ulcer. And, finally, the value of student acquirement is tested by a written examination in which the man with the glibbest gift of language succeeds best, but which is really scarcely a more rational way of testing a student's practical knowledge than it would be to test a tailor's ability to select good material and make a well-fitting suit of clothes by a written examination. As long as the student knows that the chief criterion of his work is to be a written examination he will devote a large part of his time to cramming for such examination at the expense of those facts with regard to diagnosis and treatment which will serve him best in actual practice. Experience of many years in Germany has demonstrated that there are other ways than the written examination of testing the fitness of a student. There, clinical and laboratory examinations are regularly given, and it is encouraging to note that many of our hospitals and some state boards are beginning to require some such tests.

TOO LITTLE ATTENTION TO TEACHING SURGICAL DIAGNOSIS

Nearly all who are familiar with the situation in modern surgery will admit that a very large number of patients whose best interest demands prompt surgical care fail to get to the surgeon early enough and in many cases not at all. In the acute diseases, especially abdominal and bone diseases, the results to the patient are often disastrous. The blame for this state of affairs lies in large part at the door of our teachers of surgery. The hours which should be spent in teaching surgical diagnosis are given over to clinics which are more useful in demonstrating to the student the skill and boldness of their teacher as an operating surgeon than those subjects which would be really most useful to them in practice.

Hence it comes that many cases of early joint tuberculosis, osteomyelitis, flat-foot and other conditions are treated for rheumatism until the patient's chances for satisfactory recovery are greatly reduced; hence cases of chronic appendicitis, gall-stones, gastric cancer and ulcer are frequently treated for dyspepsia until the favorable time for surgery is past; hence many unnecessary deaths from intestinal obstruction, perforated gastric or intestinal ulcer; hence in many cases chronic ulcers or gall-stones give rise to cancer, or the ulcerated cervix, uterine fibroid or benign breast-tumor undergoes malignant change. The original condition is readily curable; neglected, it too often results in a hopeless situation. These facts regarding malignant degeneration of benign growths and influence of chronic irritation and ulcer in causing cancer have been often reported by reliable observers. We cannot make a skilled diagnostician of every practitioner, but more teaching of surgical diagnosis instead of operative surgery will certainly help.

LABORATORY METHODS IN TEACHING ANTISEPSIS

When, as has sometimes happened in the past, a surgeon gets into trouble with infection, he calls in the bacteriologist to locate the break in technic. We then acknowledge that the laboratory is the final test of our aseptic and antiseptic technic. Why should we not study hand disinfection, sterilization of instruments, sutures and ligatures, dressings and textile materials in the laboratory? For six years such laboratory teaching in antiseptic technic has been given the students of Ithaca division of Cornell University Medical College, and from this practical experience it has been found that such laboratory teaching can be given within a very limited laboratory period, providing the course is well organized. The students are greatly interested in the work and get great benefit from it. When such first-hand teaching of the value of antiseptic methods is common the widely advertised proprietary antiseptics which are claimed to be as powerful germicides as phenol and mercuric chlorid will not have so wide a sale.

In such laboratory teaching the students are assigned several of the more generally used methods of skin disinfection. They smear their fingers with a bouillon culture of bacteria, some using an ordinary vegetative form and some a spore-bearing form. Non-pathogenic bacteria may be used to eliminate any possible danger of infection; for example, *Bacillus subtilis* is a harmless germ to use but very difficult to kill. After rubbing the culture into the skin thoroughly the student proceeds to

scrub as he would for an operation. Two tests of the efficiency of the clean-up are made. First, a piece of sterile string is drawn through the fingers several times, giving about the amount of friction one gets from ordinary handling of instruments and materials. The string is then dropped on an agar slant, and placed in the thermostat, where developments are watched. Second, to ascertain whether the deeper layers of the skin have been disinfected, the superficial epithelium is scraped off with a sterile scalpel and some of the deeper epithelium is put on a culture medium. Before these tests of results are made the excess of antiseptic is washed off with sterile water. Results show that a fairly long and thorough scrub is necessary if complete disinfection is to be obtained, and that there is a decided difference in the value of commonly used methods. To test the thoroughness of disinfection of materials a piece of string saturated with culture is placed in the inside of various pads which are tested in the ordinary steam sterilizer without pressure, the formaldehyd sterilizer, the hot-air sterilizer and the autoclave with superheated steam under pressure. These experiments easily show the students the superiority of superheated steam under pressure and that under ordinary conditions it is about the only reliable and practical agent by which spores in textile materials may be certainly killed.

The disinfection of instruments is tested by grasping a bit of infected string firmly in the jaws of forceps which are tested by boiling, soaking in antiseptic solution and exposure to formaldehyd vapor. It is easy to demonstrate the fact that a few minutes' boiling or soaking in phenol solution will not certainly kill spores and bacteria which may be lodged in some crevice of an instrument. These practical tests of common methods will explain many cases of low-grade infection, phlebitis, embolism and disastrous cases of tetanus which are sometimes considered unexplainable accidents of surgery.

THE TEACHING OF ANESTHESIA

Almost any graduate in medicine, if confronted with the necessity of an operation for himself or one of his family, would consider the choice of an anesthetist next in importance to the choice of his surgeon. Not only the safety but the comfort of the patient is greatly concerned. Practically every graduate has sooner or later to give a general anesthetic, yet students in many schools are still graduated without any practical instruction in the administration of anesthesia.

Three kinds of instruction seem to me highly important in general anesthesia: first, class-room instruction; second, laboratory demonstration, or, better still, individual laboratory work for each student to determine definitely the effect of the more generally used anesthetics on circulation, respiration and, if possible, also on the kidneys. A student who has followed carefully the heart's action on a smoked drum with ether and with chloroform will have no question as to the relative heart depressant effect of these two most commonly used anesthetics. Regular charting of the blood-pressure curve is also valuable, although not nearly so striking as the effect on the heart itself. Such instruction has been given in the laboratory of physiology and pharmacology at the Ithaca division of Cornell University Medical College for several years, and it cannot fail to have a great influence in deciding the intelligent student as to his choice of an anesthetic.

A third and more important matter is instruction in the practical administration of anesthesia. This may be readily managed in such a way as not to prejudice the chances of the patient. Any surgeon who has enough operative experience to fit him to teach at all should be able from his own clinical material to give his students at least a limited practical experience in general anesthesia. I am accustomed to detail each student of my class in turn to go with the anesthetist during one or more general anesthesias. The student is instructed about the amount of anesthetic to use, indications for more or less anesthesia, how to hold the jaw, protect the eyes, look for false teeth and many other details which experienced anesthetists always keep in mind. After observation of the anesthetist and practical instruction in one or more cases the student is allowed to give the anesthetic himself, always under the direction of an experienced anesthetist. Some students give twelve or fifteen anesthesias and become fairly proficient. Practically all of them are impressed with the importance of the subject and become familiar with a few, at least, of the principles. All are certainly much better equipped to give a general anesthetic than they would be if the subject of anesthesia was entirely neglected in the class-room and no practical instruction given, as was the case when many of us graduated in medicine. The laboratory work, together with thorough discussion of the subject in class, adds much to the value of the practical instruction in the operating room. The student has thought about the matter before, knows what to look for, what to observe and gets much more out of a few carefully supervised anesthesias than he would from many times the number given haphazard without any previous thought on the subject.

USE OF CURRENT LITERATURE RATHER THAN EXCLUSIVE USE OF TEXT-BOOKS

The progress of medical men after graduation is influenced greatly by the journals and books which they read and the way in which this reading is done. The average text-book is fully five years behind in many important topics. Considering the great value of systematic reading of journals, it seems worth while to try to stimulate students to do independent reading, to select the valuable from the worthless and to economize time in getting over the vast literature which is appearing to-day. With this object of teaching students better to use surgical literature, during the past five years I have in certain subjects assigned articles in current journals rather than in text-books. As an example, in studying the subject of general anesthesia the students have been assigned articles dealing with the effects of general anesthetics on the heart, the kidneys, articles reporting large series of spinal anesthesias, ethyl chlorid and nitrous-oxid anesthesias, local anesthesias, etc. Each student has to make a short written abstract which can be read in five minutes. Several of these abstracts are read, criticized and commented on in class at a kind of conference. With a few suggestions on the selection of the important from the unimportant in medical reading, it is surprising how well the average student will succeed in getting the meat from a journal article. Many of the abstracts compare very favorably with the abstracts appearing in most of our medical journals. Each student gets a good deal of definite knowledge about one of the subjects, and in the class discussion he hears the latest ideas, culled by other students from other articles. In this way the entire sub-

ject can be covered by abstracts taking up various phases of the question and the students are invariably much more interested than in text-book recitation work, and they get the latest knowledge. They also become familiar with some of the best journals and know where to look for reliable information when they are thrown on their own resources. Very much of the progress of most practitioners depends on their ability to use surgical literature efficiently, and without much systematic, effective reading, very few men keep abreast of modern methods. It requires a little additional thought and good judgment on the part of the teacher to select and assign references for the subject under discussion, but it is surprising how easily possible it is to get together a student symposium on almost any surgical topic from the current literature if one has this method of teaching in mind. A difficulty is too much good material to assign rather than too little.

Thus far I have spoken chiefly of the faults of present methods of teaching and of a few methods which seem better adapted for instruction than those now in general use. Far more important than methods of teaching is the quality and previous preparation of the students who are to be taught, the qualifications and the abilities of their teacher and the facilities for work. With regard to the student himself and his preliminary preparation for medical study, I believe that few if any teachers in universities requiring a college degree as a preliminary to medical study would feel satisfied to go back to teach high-school graduates. It is true that the higher entrance requirement shuts out some worthy men, but there will always be plenty of schools that will offer these men as good facilities for work as they can profit by. If the secondary schools would rearrange their curriculum and select only those subjects necessary for college entrance it would be possible for students to take the preliminary degree at 21 without any difficulty, and this is really about as early as a man can profitably begin the study of medicine. With such an arrangement a student would take practically all of his science work in a college, where facilities for teaching are far better than in any except in a few of the best preparatory schools.

The ideal medical school should be a department of a well-established university, for the universities are in a position to uphold the higher standard of education. In too many cases the university only lends its name and has no influence in appointment of teachers, in methods or standards of work, maintenance of the indispensable laboratories and clinics or financial support for expensive teaching. The financial rewards of surgical practice are great enough so that special effort is necessary to get men who will devote sufficient time, thought and effort to teaching. Conditions in engineering and law are similar, but have universities not done much more for these than for surgery and the practical branches in medicine? Even some of our best universities at present are obliged to choose their professors because of their affiliation with some large hospital which supplies clinical material. The university clinic should be independent of outside influences and the university should be free to choose as professors any man of ability, regardless of hospital connection. A university surgical clinic used for the joint purposes of relieving the sick, teaching, and investigating important problems, is as necessary a part of the equipment of a university as the laboratory of chemistry or of anatomy. In selecting teachers of surgery, teaching ability as well as operative skill should be considered. In some cases the professor of surgery is appointed because of hospital connection, and the hospital connection comes as a result of political, financial, social or even religious influences. Such factors should not figure to any extent in appointments. The professional and teaching ability and high character of the man should be the test. The university medical college can best maintain the necessary high standard for entrance and solid requirements for work during the course and for graduation.

While there are many teachers among us who are devoting much thought and effort to their teaching and accomplishing great results, there is probably no subject in the medical curriculum more poorly taught than surgery. This is easily understood when we remember that a majority of teachers in surgery devote nine-tenths of their thought and effort to the practice of their profession and one-tenth to teaching. Practically all teachers are inadequately paid considering the compensation which a surgeon can earn in the actual practice of his profession. Not all successful practitioners are good teachers. A certain amount of practice in teaching is important to successful teaching, and the man who is ambitious to teach might well begin in a subordinate position early. Men of scholarly tastes and good ability who are willing to make some sacrifice should be given the preference, but they should be sufficiently well paid so that they can afford to devote a reasonable amount of effort to actual teaching. Ability to present a subject clearly and systematically is to a great degree born with the man, and born teachers should be sought for and promoted in this country as they are to-day in Germany.

The general public is really most concerned of all in the efficient teaching of surgery. The field of surgical intervention is widening every year. In the future more than in the past the health, happiness, efficiency and even the lives of a large number of people in every community will depend on the judgment and skill of the surgeons of their community. When the public realizes this more fully, support of our medical colleges and research laboratories will be much more liberal than it has been in the past. All the profession are also concerned, not only for the welfare of ourselves and our families, but for the honor and prestige of our profession. The student is concerned, for on the efficiency of his instruction depends much of his success in earning a livelihood. Our universities are concerned, for the progressive work of their teachers will spread their name and fame to the community. Those at the head of educational affairs in our universities have accomplished great things in the past and much will depend on their interest and effort whether they progress as rapidly in the future. The whole medical profession must work for better methods of teaching in surgery as well as in other subjects. The Medical Council of the Association has done splendid work during the past few years, and we may look for a great deal from their effort in the years to come.

CONCLUSIONS

To recapitulate some of the methods and conditions which seem likely to promote ideal teaching: Emphasis should be laid on the principles and methods rather than on a mass of disconnected facts presented without coordination. Thorough study of a few essential subjects is much to be preferred to a superficial covering of much ground. Antisepsis and arrest of hemorrhage may well be taught by practical work in the laboratory and operating room as well as in the class room. Anesthesia

should also be taught in the laboratory and operating room as well as in the class room. Practical and laboratory tests should be given when possible, instead of written and oral examinations. Current literature can be profitably used in some cases instead of exclusive text-book instruction. University connection and standards of work are desirable. The university should control its independent hospital, where students will have an opportunity to study important surgical diseases and injuries throughout the entire course of the cases. Surgical diagnosis should be given more attention than major operative surgery. The public should be trained to appreciate the importance of sound medical and surgical teaching and urged to supply sufficient funds so that our universities and clinics can be well equipped and supported. Surgical teaching should be paid liberally enough so that a professor can afford to limit his practice and devote the necessary time to well organized, systematic teaching without too great sacrifice. Many of these ideals are practical and realized or being realized in some schools. Other conditions demand earnest and united effort of the whole profession if we are to advance in future as in the past.

ABSTRACT OF DISCUSSION

DR. J. CLARK STEWART, Minneapolis: We have certainly come to the parting of the ways in surgical teaching, and both standards and methods of teaching need revision. All physicians are familiar with the readiness of recent medical graduates to rush in and do major surgery, their first attempts at abdominal operations being saved from fatal results by the grace of God and access to a clean operating-room. These operations preserve the life of the patient, but how little benefit is often obtained in the absence of careful diagnosis and knowledge of the conditions exposed! Our older methods of clinical teaching, by which the teacher, depending for his remuneration entirely on the glory attained among his students, presented to them only the most showy and unusual operations, together with the general exaltation by the profession of technical skill over pathologic knowledge, is largely responsible for this attitude. All this must be changed. Pathology and diagnosis must be taught, and the operative clinic must be minimized. Clinical teachers must be paid for their time, and must teach students surgical diagnosis at the bedside and in the amphitheater. Each school should have its own hospital, where extern work can be done by all advanced students, and the operations before the class should be restricted, so far as possible, to the cases carefully studied by the students. Clinical examinations, where students actually diagnose surgical conditions, are most important tests of student knowledge.

The need of improvement in surgical qualifications is a crying one, and well understood by the laity, who are becoming restive under the indiscriminate operations of the profession. In Colorado recently this feeling culminated in a bill to restrict the practice of surgery to the licensees of a state board appointed by the governor. This bill, fortunately, was defeated, for although the end desired was worthy, the means assigned needed much improvement. Such legislation is likely to be advanced in other localities in the near future, and the profession must be prepared to meet the demand for better and more responsible surgeons. In Minnesota we are going to anticipate such popular demand by offering an advanced degree in surgery, master in surgery, open to graduates of reputable schools of five years' standing, including one year's satisfactory hospital service and based on the results of one year's work in surgery done in residence in the University of Minnesota. We think this degree will be popular and that enough of our younger surgeons will avail themselves of it to form a nucleus of high standard men to whom the public will look when they ask for higher surgical qualifications.

DR. L. J. HIRSCHMAN, Detroit: The trouble has been that the faculty of the average medical college has consisted largely of general surgeons, so that the students have received a lop-sided education in surgery. Then they are turned out to be abdominal surgeons. How many students are taught how to treat a simple case of hemorrhoids or to enucleate a tonsil, which everybody is called upon to do? There has been too much spectacular amphitheater teaching and too little real teaching. State boards must require a more rounded-out education than they now do. The Association of American Medical Colleges mentions in its curriculum twenty-seven different subjects; diseases of the rectum and anus are not included in the list, but are supposed to be taught under general surgery, though as a rule they are not. There is no subject which is so important and which is such a fruitful source of income for the advertising quack.

COMPRESSION OF THE SPINAL CORD CAUSING PARAPLEGIA

AND ITS SURGICAL TREATMENT *

A. PRIMROSE, M.B., C.M. (EDIN.), M.R.C.S. (ENG.)
Surgeon to the Toronto General Hospital; Associate Professor of Clinical Surgery in the University of Toronto
TORONTO, CAN.

The conditions which demand surgical interference in paraplegia due to compression of the spinal cord are by no means clearly defined. There are two chief reasons for this: first, the difficulty in diagnosing accurately the cause of the paraplegia; and second, the difficulty of distinguishing between cause and effect when we attempt to determine the results attained by our surgical interference. When a cure results after operation it is often impossible to make sure that recovery would not have ensued had Nature been left unaided to pursue her course. Nevertheless, it is obvious that certain cases are definitely improved by surgical interference, and not infrequently it holds out the only hope of relief. In attempting to define the indications for operation I have made a study of fourteen cases which have come under my care.

Hemorrhage within the neural canal may be the cause of the compression. This may be extradural from rupture of the spinal veins, or subdural; or it may be into the substance of the cord. When an interval of time elapses between the infliction of the injury and the occurrence of the paralysis the possibility of the compression being caused by extravasated blood must be borne in mind. This point is illustrated in the following cases:

CASE 1.—A man fell from a height of 16 feet to the ground, he got up, picked up his hat, which had fallen off, and used both hands to put it on his head. He said that he was not hurt and walked four or five yards to his house where he lay down on the sofa. Five or six minutes afterward he observed a numb sensation in his arms and hands and he rapidly became completely paraplegic below the sixth cervical spinal segment. Operation was refused and the man died six months after the injury without improvement.

CASE 2.—A man, aged 35, fell off the top of a lumber-pile 8 feet to the ground. He got up with the help of two men and having his arm over the shoulder of each he walked to his house 50 yards distant, being able, though weak, to move one foot in front of the other. Within an hour he became completely paralyzed below the seventh cervical spinal segment. He died a year afterward without any

* Read in the Section on Surgery of the American Medical Association, at the Sixty-first Annual Session, at St. Louis, June, 1910.

material improvement in his condition. On autopsy a transverse fracture of the sixth cervical body was found without forward dislocation, the anterior posterior diameter of the neutral canal was narrowed to one half its normal width. Unfortunately no examination of the cord was made.

It may be impossible to determine whether the hemorrhage is extradural or beneath the meninges. Severe pain may indicate pressure on the nerve-roots, where considerable hemorrhage has occurred, either within the dura or outside of it. On the other hand, hemorrhage into the cord is more likely to give definite and isolated tract lesions, so that we may have such conditions as "crossed paralysis," etc. Then, again, hemorrhage may be confused with the effects of congestion at the seat of injury. The results of hemorrhage are likely to manifest themselves at an early date, often within a few minutes after the injury, while the paralysis due to congestion may be deferred for twenty-four hours or more.

Where there are symptoms pointing to hemorrhage outside the cord causing paralysis, it is, I believe, the better plan to operate at an early date and not to delay with the hope that absorption of the clot may take place. The fact is that absorption may not occur and valuable time may pass during which operation might have been of service. This was illustrated in the following case:

CASE 3.—A lad 10 years of age was accidentally shot in the neck. The bullet (22 caliber) was extracted above the right shoulder-blade. The patient was immediately paralyzed below the eighth cervical spinal segment. Four months and a half subsequently laminectomy revealed dense connective tissue surrounding the dura, due possibly to a perithecal inflammation, or, more likely, an old hemorrhage with organized blood-clot. The dura beneath appeared quite normal. No improvement followed the operation. It is now nine and a half years since the injury, and the lad is still alive in the Home for Incurables, Toronto.

It is obvious from this case that surgeons are wrong in teaching that bullet-wounds producing cord lesions should be left without operation.

Individuals who are subjected to severe injury to the spine and the cord may succumb to the initial shock, death usually taking place within a few days of the accident. This is illustrated by the two following cases:

CASE 4.—A man aged 30 was admitted to hospital. Four hours previously he had fallen 12 feet and been struck by a plank as he fell. He became immediately paralyzed below the seventh cervical segment. The patient died within a week of the injury, never having recovered from the shock.

CASE 5.—The patient was a laborer aged 30, on whose back a brick chimney fell from a height of 10 feet. Complete motor and sensory paralysis below the level of the eighth dorsal segment occurred immediately. On admission the patient was in a state of complete collapse from which he rallied somewhat but died on the third day. Autopsy revealed a fracture dislocation at the level of the sixth and seventh dorsal vertebræ.

Acute flexion of the cervical spine producing stretching of the cord with hemorrhage into its substance is noted in one of my cases.

CASE 6.—A lad, 14 years of age, was standing in a shed when the roof fell and pinned him down with his neck flexed acutely forward. He was rendered unconscious for a time, but, on being released, found that he had lost the power to move the right leg and both arms and all sensation in both arms and legs. Twenty minutes after the accident sensation began to return, but voluntary control of the muscles was only gradually restored. In the course of a few weeks, however, the patient was able to walk fairly well. Twelve weeks after the accident his medical attendant is said to have operated for the purpose of removing a piece of bone which was pressing on the spinal cord. The immediate result of the operation was completely to abolish motion and sensation in the upper and lower extremities. Subsequently this was restored to a limited extent but the condition did not change much for twelve months; then the patient came under my observation. There was then extreme wasting of the muscles of the upper extremities, but the loss of motor power was not absolute. There was almost complete paralysis of the trunk muscles and those of the lower extremities, but there was no impairment of sensation, and the bladder and rectum were under voluntary control. There had obviously been destruction of the anterior horn of gray matter of the brachial enlargement below the sixth cervical segment with damage to the motor conducting paths. The sensory conducting paths had evidently escaped injury. The patient died unimproved of pneumonia five years after the accident.

Early operation for the relief of compression after fracture is occasionally instrumental in restoring function, notably in those cases in which the compression is caused by fragments of the neural arch which have been driven forward into the neural canal.

CASE 7.—A man, aged 37, was struck on the top of the head and knocked over on his back. Paralysis below the fourth lumbar segment immediately ensued. At operation, which I performed, fifteen days after the accident, the neural arch of the third lumbar vertebra was found to have caused a rent in the dura mater; it was depressed on the cauda equina. The lamina of the second lumbar vertebra was also fractured and depressed and there was a small quantity of blood-clot in the neural canal. Sensation was restored and motor power gradually improved. By the end of the third month the patient had complete control of the bladder and rectum. At the end of the year he could walk with very slight assistance and complete recovery seems probable.

The benefit of operation in such cases is also illustrated in the following case:

CASE 8.—A lad, aged 16, was hit on the back by a falling tree and immediately lost sensation and motor power below the first lumbar segment. Laminectomy was performed on the thirty-second day after the accident. The laminæ of the twelfth dorsal and first lumbar vertebræ were fractured and the superior articular process of the first lumbar was also fractured. These fragments of bone were driven into the neural canal, and there was a rent 1 cm. long in the dura mater. Two days after the operation sensation began to improve, and one month thereafter some restoration of motor power was noticeable. Gradual improvement took place. It is now two years and eight months since the operation and the patient is able to stand with slight support but he cannot walk alone. He has, however, complete control of the organic reflexes, giving him control over the bladder and rectum, and this fact alone would be sufficient to warrant operative interference, if, indeed, in this case the restored function is to be attributed to the surgical measures employed.

It is quite impossible to determine with absolute certainty that the spinal cord is completely severed. Undoubtedly the most reliable sign of a complete transverse severance of the cord above the lumbar enlargement is the complete and permanent abolition of the knee-jerks and ankle-clonus; but valuable time is lost if we wait for this test in traumatic cases. One must urge that in the light of experience we should operate early where doubt exists. The following is an instance in which, unfortunately, the damage to the cord was irreparable:

CASE 9.—A man, aged 40, fell 8 feet and injured his spine. Doubt existed as to the amount of damage to the cord. There was complete paralysis of sensation and motion below the tenth dorsal segment. Three days subsequently laminectomy was performed. The left inferior articular process of the ninth vertebra, along with a

portion of the neural arch, had been driven in on the cord, which was completely severed and pulpified, the two ends being separated nearly 2 cm. The wound healed by a primary union, but the patient died suddenly 25 days after the operation from pulmonary embolism, which at autopsy was found to have originated in the prostatic venous plexus, the thrombosis there having possibly been induced by the frequent use of the catheter.

Passing now from traumatic lesions of the spinal cord, I shall refer briefly to compression paraplegia the result of disease. The most common condition here is that encountered during the progress of spinal caries. The cause of the compression may be thickening of the dura (pachymeningitis), a collection of caseous material in the neural canal, or the pressure of an abscess. A tuberculoma may exist in the interior of the spinal cord, as in a case reported by Kraus and McGuire.

Paraplegia in Pott's disease is frequently amenable to less severe measures than laminectomy. Many patients may be cured by rest with extension, but occasionally operative interference is necessary, and it certainly is so in cases in which abscess is the cause of the trouble.

In the two following cases, in which I operated, I found an abscess invading the neural canal from in front and pressing on the spinal cord:

CASE 10.—A man, 60 years of age, with compression paraplegia more or less complete and due to spinal caries, the symptoms having existed for two years, was subjected to laminectomy. The sixth, seventh, and eighth dorsal laminæ were removed. The cord was compressed by an abcess which had invaded the neural canal in front of the dura. The man died, forty-one days after the operation of tuberculous meningitis. The autopsy showed a sterile condition of the mediastinal abscesses, which contained no longer fluid, but a mass of caseous material which had replaced the pus.

CASE 11.—The patient was a child 6 years of age with paraplegia from Pott's disease existing for eighteen months prior to operation. Pus was found in the neural canal at the level of the fifth dorsal vertebra. The wound healed completely, but the child was unimproved and died eighteen months after the operation. Unfortunately no autopsy was obtainable.

The lesson I have learned from these two cases is that operation for the relief of paraplegia in Pott's disease should not be deferred too long. I did not have an opportunity of operating at an earlier period, but I am sure that the chances of success are diminished when operation is postponed beyond a reasonable time. I should urge that if paraplegia is not relieved after treatment by extension applied for, say, three months, then laminectomy should be done unless contra-indicated by the general condition of the patient.

It is obvious that in many instances, notably in tumors, valuable time is lost while medicinal measures are persisted in. Meanwhile the cord is damaged beyond repair, and operation is undertaken too late to effect a cure or again a malignant growth may have advanced so far that radical removal is impossible.

My point is illustrated by the following case, in which a tumor pressing on the spinal cord produced paraplegia, but operation was not undertaken until it was too late to eradicate the growth:

CASE 12.—A man 52 years of age with symptoms of impaired sensation and motion below the seventh dorsal segment was treated assiduously by drugs for some two years when laminectomy was performed, and a sarcomatous growth revealed, which was pressing on the spinal cord at the level of the fifth dorsal vertebra. Subsequent to operation a certain amount of motor power returned but pressure symptoms recurred and the patient died eleven months after operation. At autopsy extensive recurrence of the growth was demonstrated.

Similarly, in the following case, operation was undertaken too late:

CASE 13.—A girl, 19 years of age, for eight months prior to admission, had had progressive weakness of the lower extremities with a dull pain over the sacral region and extending down the thighs, and finally loss of the organic reflexes. Distribution of the areas of disturbed sensation was symmetrical on the two limbs and indicated a lesion involving the spinal cord below the third lumbar segment. Laminectomy was performed, and a soft gelatinous material was found lying on the dura. This was removed. The patient subsequently improved to a marked but limited extent with restoration of sensation and voluntary motor power, also some control over the bladder and rectum. After the lapse of two months she again began to lose ground. Five months subsequently a tumor under the left iliolumbar muscle proved to be a round-celled sarcoma. The patient is still alive, seven months after the first operation, but rapidly going down hill.

The following case illustrates the impossibility of determining the existence of a tumor pressing on the cord. Operation was clearly indicated and in such cases should always be carried out early, before the cord is damaged beyond repair.

CASE 14.—A man, 30 years of age, complained of pain and stiffness in the back of the neck, extending down the limbs, with great weakness in the legs. These symptoms have gradually developed for a period of two years. Immediately prior to operation the paralysis was almost complete below the level of the fourth cervical segment and a laminectomy was performed, removing the fifth, sixth, and seventh cervical arches, when a vascular membrane was found on the surface of the dura and was removed. Three days after the operation, sensation began to improve and there was a gradual return of motor power, so that in the course of two months the patient had made an almost complete recovery and has now for more than a year been able to work continuously as a laborer. Dr. Goldie and I[1] have elsewhere reported the case as one of cervical hypertrophic pachymeningitis in which it was impossible to determine prior to operation whether or not a tumor was present. It is of interest to observe that the removal of a very small mass of tissue seemed to produce very definite improvement.

The question of the advisability of seeking relief by operative procedure in compression paraplegia is by no means one in which there is unanimity of opinion among the profession. One may say that in studying the series of fourteen cases presented in this paper one may come to certain conclusions which seem justifiable. We may dismiss at once the cases in which paralysis occurs as the result of compression in Pott's disease. Undoubtedly the patients should be submitted to operation when one fails to effect a cure by efficient rest and extension. The brilliant results obtained by operation in many instances is illustrated by a paper recently published by Mr. Donald Armour,[2] in which he records the history of a patient in whom a large abscess surrounded the cord and implicated the laminæ and bodies of the third and fourth cervical vertebræ. The abscess was opened, curetted and closed without drainage and healed by first intention. After four and a half months the patient was able to walk without assistance.

Similarly it is obvious that if a new growth is the cause of the compression the tumor should be removed

1. Goldie, W., and Primrose, A.: A Case of Cervical Hypertrophic Pachymeningitis with Exploratory Laminectomy, Canadian Pract. and Rev., 1909, xxxiv, 135.

2. Armour, Donald: Cervical Caries: Operation and Recovery, Proc. Roy. Soc. Med., 1908, i, Neurol. Sect., p. 64.

when that is feasible. The consensus of opinion at present would suggest that even when the growth is a syphilitic gumma operation for its removal is a wiser course than an attempt to cause its disappearance by the administration of drugs.

Pearce Bailey[3] quotes Stursberg to the effect that the percentage of cures in operation for tumor of the spinal cord is 32.2 per cent., but it is obvious that hitherto surgical interference has been delayed far too long in the majority of instances. The operation of laminectomy carefully carried out is not a dangerous procedure. I have not failed to get sound union in all the cases in which I have operated and there has been no operative mortality. Moreover, the stability of the spinal column is not appreciably interfered with by laminectomy.

Horsley,[4] reporting twenty-one cases, describes the condition of chronic spinal meningitis in which the symptoms simulate tumor and which is relieved by opening the theca and washing out with strong mercurial lotion. In his cases there was excess of cerebrospinal fluid under pressure. Bliss[5] describes a somewhat similar condition as "cysts within the spinal canal" and Spiller has recorded a case of like nature.

Paraplegia the result of traumatism presents a more difficult problem. Allen[6] of Philadelphia published the history of nine cases with post-mortem findings. His observations lead one to conclude that regeneration of the cord after complete transverse lesion is impossible, and this view is maintained by Spiller,[7] Murphy[8] and others.

Murphy records the results of experiments on dogs by various investigators and shows that in complete transverse section in these animals there is no restoration of function.

In the human cord restoration of function after division has not been demonstrated. It is true that there are some cases on record which would inspire the hope that regeneration of the cord might be possible after division.

Shirres[9] and Armstrong attempted to secure regeneration in a severed cord in man by placing a segment, 3 inches long, of the spinal cord of a large dog alongside the severed ends of the spinal human cord. The patient unfortunately died of a large abscess in the kidney three and a half months after operation. Up to that time there had been some subjective sensations in the lower extremities and in the lower abdomen, and a certain amount of tone was observed in the muscles of the right thigh and leg. At autopsy the dura and tissue at the site of the grafting experiment showed a mass of minute myeline sheaths of nerve fiber, which lay closely adherent to the dura mater, and when traced upward and downward united with the segments of the cord above and below.

A case is recorded by Harte and Stewart[10] of bullet wound in the mid-dorsal region in which the severed cord was sutured with partial restoration of function; and the report of a somewhat similar case with partial success is published by G. R. Fowler.[11] In such instances, however, one must entertain the suggestion that the severance of all conducting paths of the cord was not complete. Moreover, in operating on the injured cord it is not always easy to determine the exact amount of damage; the careful operator is willing to leave the cord undisturbed when all pressure is relieved, knowing full well that very slight manipulation of it may do further irreparable damage. Solieri reports a case most favorable for successful results after suture if such were attainable. It is that of a clean severance of the cord at the third dorsal segment by a long knife. Suture sixteen hours after injury was performed, but with negative results as to restoration of function.

It seems an undoubted fact that regeneration of the severed cord is impossible. Repair of nerve fibers ceases where the primitive sheath ends; the latter seems necessary for regeneration, and hence the fact that we have restoration of function in severance of peripheral nerves but the absence of such restoration in severance of the cord.

Kilvington[12] of Melbourne suggests the feasibility of nerve-crossing in the neural canal in cases of severed cord, and he has had most encouraging results in experiments on dogs by suturing the central end of one of the limb nerves to the peripheral ends of the nerve supply to the bladder and rectum. If it is possible by such means to restore control over the bladder and rectum it would indeed greatly diminish the misery of many unfortunates. He finds on the human cadaver that it is possible to unite the eleventh and twelfth dorsal, and possibly the tenth dorsal, directly to the second, third and fourth sacral nerves. The operation would necessarily be severe, and of course there would always be a danger of making matters worse by such operative measures.

Spiller concludes from his experiences that in most cases operation may do harm. He is not prepared to assume, however, that operation should not be performed in any case of fracture. We have undoubtedly learned that our gross manipulation of the spinal cord in operation may do a great deal of harm, but surely there is a possibility of guarding against this, at least to a great extent, and in our technic we should be extremely careful not to do damage. It is possible, for example, to remove depressed fragments of bone without any appreciable disturbance of the cord, and to remove a blood-clot which may be causing pressure. One cannot but be convinced that many such patients are benefited by operation, and without doubt the chances of success are greatly enhanced if the operation is done early. Doubt often exists as to the cause of the compression. After studying 244 cases of fracture of the spine occurring over a considerable period of years in the Boston City Hospital, Burrell concludes that in many instances it is impossible to ascertain, except by open operation, whether the cord is crushed or pressed on by bone, blood or

3. Bailey, Pearce: The Surgical Diagnosis and Treatment of Tumors In and About the Spinal Cord, THE JOURNAL A. M. A., March 12, 1910, p. 849.

4. Horsley, Sir Victor: Chronic Spinal Meningitis, Brit. Med. Jour., February, 1909, p. 513.

5. Bliss, M. A.: Cysts Within the Spinal Canal, THE JOURNAL A. M. A., March 13, 1909, p. 885.

6. Allen, A. R.: Injuries of the Spinal Cord with the Study of Nine Cases with Necropsy, THE JOURNAL A. M. A., March 21, 1908, p. 941.

7. Spiller, W. G., Musser, J. H., and Martin, E.: A Case of Intradural Spinal Cyst, with Operation and Recovery; with Brief Report of Eleven Cases of Tumor of the Spinal Cord or Spinal Column, by W. G. Spiller, Univ. Pennsylvania Med. Bull., 1903-04, xvi, 27, 56.

8. Murphy, J. B.: Neurological Surgery, Surg. Gynec. and Obst., April, 1907, p. 365.

9. Shirres, D. A.: Regeneration of the Axones of Spinal Neurones in Man, Montreal Med. Jour., April, 1905.

10. Harte, R. H., and Stewart, F. T.: A Case of Severed Spinal Cord in Which Myelorrhaphy was Followed by Partial Return of Function, Tr. Am. Surg. Assn., 1902, xx, 28.

11. Fowler, G. R.: A Case of Suture of the Spinal Cord Following Gunshot Injury Involving Complete Severance of the Structure, Ann. Surg., 1905, xlii, 507.

12. Kilvington, B.: An Investigation on the Regeneration of Nerves, with Regard to Surgical Treatment of Certain Paralyses, Brit. Med. Jour., April, 1907, p. 988.

exudate; he further emphasizes the fact that if pressure on the cord is allowed to remain for many hours irreparable damage may take place. I agree with Carson[13] that unless it is perfectly clear that the cord is immediately damaged an open operation should be done to determine the condition present and to relieve pressure where that is found possible.

It has been demonstrated by several observers, *e. g.*, Allen,[14] Holmes[15] and others that the spinal cord may show very little alteration even on microscopic study and yet in reality may have ceased to be a conducting mechanism. May we not assume that such conditions may result from traumatism and that if so the continuance of conditions which might be relieved by operation may permanently destroy function? On this ground early operative interference is urged in traumatic cases wherever the element of doubt as to the cause of the paraplegia exists.

100 College Street.

TRAUMATIC FACIAL PARALYSIS

ANASTOMOSIS OF FACIAL NERVE TO SPINAL ACCESSORY, AND THE PERIPHERAL END OF ACCESSORY TO THE DESCENDENS HYPOGLOSSI*

W. W. GRANT, M.D.
DENVER

In nerve anastomosis, surgeons recognize the desirability of maintaining, by substitution where possible, the functions of all important muscles.

In paralysis of the face, no matter whether the spinal accessory or the hypoglossal nerve is used, paralysis of the trapezius and sternomastoid, or of the tongue, has been a necessary result, substituting a lesser for a greater evil. If this can be avoided by a more elaborate operative anastomotic procedure, it is a consummation most earnestly to be desired. The following case gives hope of a more promising future. I believe the complete operation in the cure of facial paralysis has not heretofore been done, and, for this reason, I have embodied considerable detail in the technic and clinical history.

Patient.—W. P. B., of Evanston, Ill., aged 26, while in his room at night on Sept. 15, 1908, received a pistol wound, 32 caliber, through his right ear, resulting in considerable hemorrhage and shock, and immediate paralysis of the right side of the face, with complete loss of hearing on the same side. He was confined to bed for two or three weeks, at the end of which time the wounds were healed. There was no evidence in the clinical history that the bullet had entered the brain. Four months and one week after the injury, the patient and his mother came to Denver to consult me as to the possibility of relieving the facial paralysis.

Examination.—This showed a scar at tip of mastoid where the bullet entered. The auditory canal was completely obliterated by bone. The tuning-fork was negative as to hearing; the right face completely paralyzed from the frontalis muscle to the mouth, with the usual facial asymmetry, the right side drooping and heavy from fatty degeneration. The right eye was a source of great discomfort from inability to close it and from profuse lacrimation. A radiograph previously taken showed the bullet lodged on the floor of the middle fossa in front of the ear. A second one (Fig. 1) taken by Dr. S. B. Childs of Denver showed the course of the bullet through the petrous portion of the temporal bone, leaving fragments of lead in its course and lodging in the middle fossa. From this, and the fact that there was no disturbance of taste, the conclusion was reached that the course of the bullet was forward and upward and cut the facial nerve in the space between the chorda tympani and the stylo-mastoid foramen. The chorda tympani leaves the facial at the lower part of the Fallopian duct where it turns downward, and quits the tympanic cavity just inside of the Glaserian fissure, finally joining the lingual nerve and ending in the anterior part of the tongue. There was no evidence of its being seriously injured. If the facial nerve was severed by the bullet after leaving the foramen, it would complicate the operation and make it difficult to find the stump.

Experiment.—I concluded to use the spinal accessory for the anastomosis; but before performing the operation, I desired to ascertain if it was practicable to make anastomosis of the peripheral end of either the spinal accessory or the hypoglossal, to a convenient motor nerve. With this purpose in view, and by the courtesy of Dr. S. B. Childs and Dr. G. A. Staunton of the Medical Department of the University of Denver, I was given the privileges of the dissecting-room, and with their assistance, dissected the necks of three cadavers, using the accessory and the hypoglossal as the base of operations. The result was the selection and use of the spinal accessory and descendens hypoglossi in the complete operation. It was first performed on the cadaver. The descendens hypoglossi, usually called a branch of the hypoglossal, arises from the first and second cervical nerves, and beneath the base of the skull joins the hypoglossal and accompanies it in the same sheath to the posterior belly of the digastric muscle where they part company. The descendens hypoglossi is distributed to the depressor muscles of the hyoid bone. Below the point of section, it forms a loop with communicating branches from the second and third cervical, which go to the above muscles. No perceptible paralysis of the muscles resulted.

Operation.—The patient was sent to St. Luke's Hospital, where, on Jan. 26, 1909, assisted by Drs. Childs and Staunton, I performed the operation now described. An incision was made through skin and fascia three inches long from just above the tip of the mastoid process down the neck in front of the sternomastoid muscle; then a crescentic incision from the upper angle of the wound beneath the lobe of the ear and terminating in front at the middle of the tragus (the Kocher incision). From this stage, the dissection was continued, chiefly, with the conical handle of a scalpel and blunt scissors. The posterior border of the parotid gland was gently elevated and pushed forward. The ear was pulled upward and working gradually downward and inward in the narrow space between the mastoid process and the ramus of the jaw, the facial nerve was exposed where it enters the gland. To identify it, it was traced to its first bifurcation, in the gland, into the temporofacial and the cervicofacial branches. The upper or temporofacial seemed softer and more fragile than the larger or cervicofacial branch. The nerve was now traced and isolated to the stylomastoid foramen; and for convenience in the further progress of the operation, it was not now cut but a large silk loop put around it. The spinal accessory was now found and traced to its entrance into the fascia of the sternomastoid, which is about opposite the angle of the inferior maxilla on a straight line. A silk loop was put around it. The hypoglossal was next exposed. This nerve turns forward and crosses the occipital and external carotid arteries about the central tendon of the digastric muscle. It lies on the hyoglossus muscle and at this point the digastric was cut, posterior to the tendon, and the ends turned out of the way. The descendens leaves the hypoglossal at this point and goes down the neck on the great carotid sheath. A silk loop was put around it. With long, slender, probe-pointed scissors the facial was now severed at the stylomastoid foramen and the stump pulled outward. The accessory was now pulled upward by the silk thread, in order to estimate accurately the place of division, that no tension should exist after union; and for the same reason the patient's

13. Carson, Norman B.: Surgery of the Thorax and Spinal Column, Am. Pract. Surg., 1909, vi, 446.
14. Allen, A. R.: The Symptom-Complex of Transverse Lesion of the Spinal Cord and its Relation to Structural Changes Therein, Am. Jour. Med. Sc., May, 1908.
15. Holmes, Gordon: On the Relation Between Loss of Function and Structural Change in Focal Lesions of the Central Nervous System, with Special Reference to Secondary Degeneration Brain, 1906, iv, 514.

* Read in the Section on Surgery of the American Medical Association, at the Sixty-first Annual Session, at St. Louis, June, 1910.

head was turned, at this juncture, decidedly to the left. The nerve was severed just before its entrance into the sternomastoid muscle, and with the aid of my assistant in holding the ends of the nerves squarely together, I applied the finest linen stitch with a delicate round, curved needle at each side, including probably some of the nerve fibers, and tied them only moderately tight. A third stitch was applied on the under surface through the neurilemma only. The object of this stitch was chiefly to secure more certainly apposition of the nerve ends against tension. To prevent strangulation from excessive connective tissue proliferation, the sutured ends were enveloped in Cargile membrane. The descendens hypoglossi was severed fully three-quarters of an inch below the bifurcation of the hypoglossal, turned upward and stitched to the peripheral stump of the spinal accessory with the same technic as with the facial. The digastric muscle was reunited with chromicized gut. Not a single vessel was ligated. The original drawing (Fig. 2) made for me by Mr. Frederick Cavally of Denver, shows correctly the complete anastomosis of the nerves and their relation to the parotid gland and the sternomastoid muscle. The wound was wiped out gently with warm salt solution; the parotid was pressed gently down; the fascia united with a running stitch of No. 1 chromicized catgut, and the skin with subcuticular silkworm-gut. At the upper angle of the wound, the skin stitch was carried once completely through the skin and then continued around the ear as a subcuticular. This

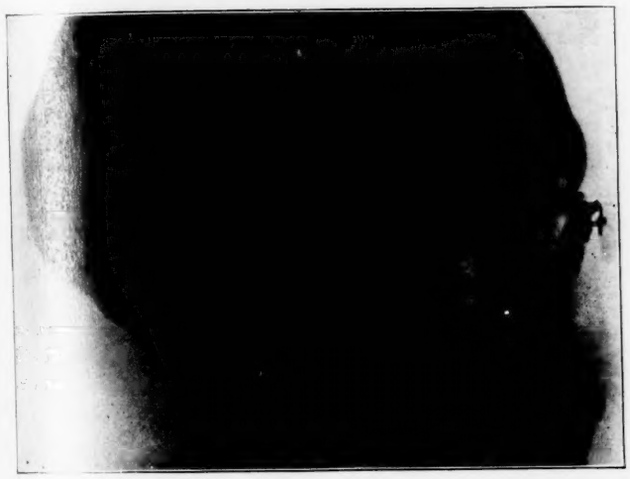


Fig. 1.—Skiagraph taken Jan. 12, 1909, showing lateral view of the head of W. B. with right side next the plate. Spectacles *in situ*. The arrow points to the shadow of a bullet lying in the middle fossa of the skull. The finger indicates the point of entrance of the bullet just in front of the tip of the mastoid process and also the shadows of numerous small pieces of lead which have been chipped off the bullet in its course through the petrous portion of the temporal bone.

technic, in an uneven or long wound, greatly facilitates the removal of the stitch by clipping the loop. The neck was dressed with sterile gauze and bandage. No fixed dressing was applied to head and neck, and the patient was instructed not to turn his head to the left, but if he should inadvertently do so, no harm would result as the nerves were given plenty of slack.

The last complete operation on the cadaver was done in half an hour. On the living subject, two and a half hours were consumed. The anesthetic (ether) was administered skilfully by Dr. Karl Roehrig, and there was neither nausea nor the slightest shock.

Postoperative History.—The patient's two weeks' stay in the hospital was uneventful. The stitch was removed on the tenth day. There was no infection and union was perfect throughout. In a week more, the patient left for home in good condition and cheerful in the promise of a good result. He was carefully instructed to use the constant, or galvanic, current five to ten minutes daily, with gentle massage to face, neck and shoulder. As soon as the muscles responded to the faradic current, it was substituted for the constant. This was not manifest until the expiration of three and one-half months. These important measures were not carried out properly and systematically the first two months, but were afterward. At the end of fifteen weeks, patient noticed feeble, associated movements of shoulder and face. At end of four months, he could voluntarily contract the muscles slightly at the corner of the mouth. I saw him at this time and observed it. A week later, I saw him again and it was distinctly noticeable, showing manifest improvement. Three months after the operation, he could depress and elevate the shoulder with ease, and at the same time could elevate the extended arm above the head, as shown in the photograph (Fig. 5), which, though taken five months after the operation, shows also a perfectly symmetrical face. There was slight atrophy of the muscle of the supraclavicular region, outer half. For two or three months after the operation, there was slight dull pain and a feeling of fatigue of the shoulder muscles after manual exercise, but no other inconvenience from section of the spinal accessory was manifest. In August, he built a sailboat, doing much of the manual labor himself, without pain or discomfort to the shoulder. On August 9, six months after the operation, he wrote me as follows: "In order to play the flute well, it is necessary to have quick and absolute control over the lips. On July the first, I could just make a note with considerable effort, but now I can play a piece through with few mistakes, though I have not absolute control over the instrument as I had before the paralysis occurred." This is conclusive testimony as to the rate and degree of improvement, and is verified by a letter from his father to the same effect. The patient also said that the coincident movement of shoulder and mouth first attracted his attention when he lifted, or pulled at an object, showing that the facial expression was an involuntary response to a forced voluntary movement of the shoulder at that time. He was in the habit of carrying the right shoulder lower, and had been frequently admonished about it when a student at the Western Military Academy. He was instructed when the photographs displaying the shoulders were taken to assume an easy natural position. Other photographs show the patient's ability to close the eye voluntarily at four months, and the power to contract, retract and balance the muscles of the mouth at five months. When the arm and shoulder were used suddenly and strongly, associated movements were marked from the fifth to the eighth months. After this it was more in harmony with his will and effort to control it. Three months after the operation, the lines of the incision were hardly noticeable at close range. I last saw the patient at the University Club, Chicago, in October, 1909, nine months after the operation. He looked well, was cheerful and happy. The bullet had given no trouble. He talked and smiled without observable paralysis, but when he laughed the disparity was very noticeable. The latter is the last defect and manifestation of weakness to disappear. The associated movements were less marked, and the muscles of neck and shoulders symmetrical. There was no discomfort or weakness in the functions of arm and shoulder, and no atrophy of the trapezius. The entire result was most gratifying.

Ballance expresses the opinion that "perfect symmetrical movements of the facial muscles from emotional stimuli can only be obtained by devoting the whole nerve, either spinal accessory or hypoglossal, to the cure of facial palsy."

Ballance and Stewart[1] say that "degeneration, after a nerve is divided, proceeds just as rapidly though it is immediately sutured to the proximal end; that the axis cylinders are destroyed in six or seven days; and that with the absorption of fats and myelin and the conversion of connective tissue into fibrous tissue, the peripheral nerve is, in six or seven weeks, a fibrous cord."

Regeneration is a slower process. It commences in two weeks after anastomosis, and is manifested in muscular reaction in about four months in facial palsy, but is not completed until a much later date.

Fatty degeneration of the muscles is also worthy of consideration. Though it follows degeneration of the

1. Ballance and Stewart: Healing of Nerves, Macmillan.

nerve, it also disappears coincidently with regeneration. As long as fatty degeneration exists, the muscles are not likely to respond to the faradic current.

It seems reasonable and natural to believe that, if a divided nerve is immediately reunited to a proximal nerve stem, degeneration of the peripheral end will not be so complete, and that, with regeneration beginning in two weeks, it ought to be completed earlier than is usual in the case of a nerve which has been, from injury or disease, in a state of degeneration for many months or years.

Ballance,[2] in reporting a case of facial palsy, expresses preference for the hypoglossal for the reason that the

Fig. 3.—Patient, four months after operation: shows facial asymmetry, but improved since operation.

cortical centers of these nerves are in closer relation than is the spinal accessory to the facial. Practically, there seems no force to this preference, as in anastomosis with the spinal accessory, success is as prompt and certain as with the hypoglossal, while associated movements are equally common to both.

He has used the lingual nerve in anastomosis with the peripheral hypoglossal, but failed, and has abandoned it. The lingual is a sensory nerve, and failure, under these conditions, is not surprising. No convenient available nerve for anastomosis with the peripheral hypoglossal has been demonstrated in operations for facial palsy. In a severed nerve, degeneration of the proximal end is exceedingly limited while, in the peripheral, it is finally complete. Both Ballance and Stewart, the leaders of the new, or peripheral, school, oppose the neuron theory held by Waldeyer, Ranvier and others that regeneration proceeds necessarily downwards from the proximal side, the axis cylinders growing into the empty spaces and finding momentary rest and renewed life and energy in the nodes of Ranvier, the conclusion being that regeneration and the restoration of function is impossible unless direct connection is restored and maintained with the ganglion centers. J. B. Murphy,[3] in the best American monograph on the subject, states that complete repair will not occur without this connection. He and others also maintain that regeneration is impossible without a neurilemma. Ballance and Stewart assert that the neurilemma cells of the peripheral segment regenerate, even the axis cylinders, independently of the proximal end, or union with it, but that regeneration is not complete in function, etc., without such connection. With this concession, it is hardly necessary to emphasize the absolute dependence on anastomosis to the proximal side, for the complete regeneration of the nerves and the restoration of the functions of the muscles.

If peripheral axis cylinder processes do fuse together to form continuous paths, independently, as maintained by the new school, though incompletely, it is a point in favor of immediate, or early, anastomosis, for such inherent power of the peripheral neurilemma cells must, it seems, retard complete degeneration, and with the stimulus of the proximal ganglion centers restored, early and more certain regeneration ought to be assured, notwithstanding the statement that "the length of time the paralysis has existed bears no relation to the rapidity of the return of function." I hope, and am inclined to be-

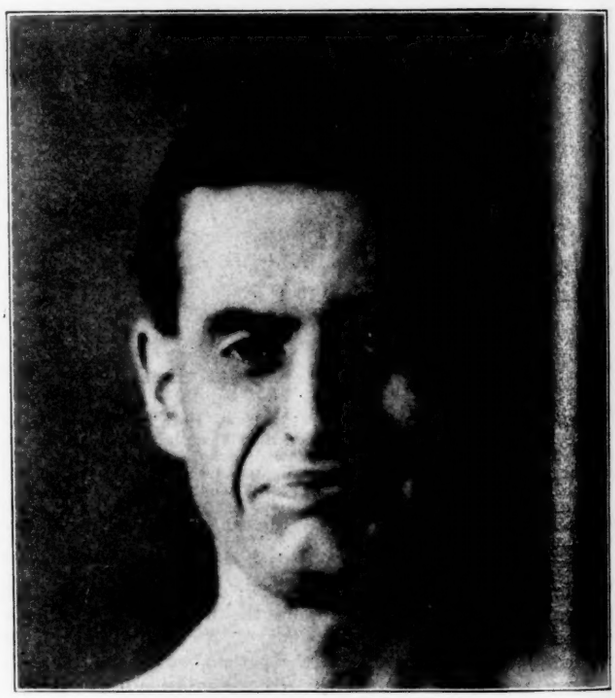


Fig. 4.—Patient, four and one-half months after operation, showing improvement and characteristic appearance of eye in facial paralysis.

lieve, that further experience will invalidate the closing statement above. This hope is further justified by the statement of Ballance and Stewart that "regeneration begins before degeneration is complete."

From the writings and experiments of Ballance and Stewart of London and Murphy of Chicago, and the references by them to continental writers, and the opinions expressed by distinguished American surgeons, I am enabled to formulate some probable conclusions of interest and value. The field is too new and the data

2. Lancet, London, June 12, 1909.

3. Murphy, J. B.: Surgery of Nerves.

yet too limited and incomplete to justify a dogmatic treatment of the subject.

"Nerve fibers are capable of maintaining their normal nutrition only when they are in uninterrupted connection with their trophic center, which controls the nutritive processes."[4] Also in reporting experiments on animals, Landois states that the degenerative process is arrested at each node of Ranvier, and that later fatty degeneration takes place simultaneously in the entire peripheral portion.

Langly and Anderson, quoted by Murphy, say that "regeneration is a downward growth." It is, too, in keeping with the Ritter-Valli law that the death of a nerve advances from center to periphery, and supports the Wallerian law that portions of fibers, separated from their trophic centers, degenerate. It is equally plausible that regeneration should proceed in the same way.

I believe the conclusion justifiable that the sooner a nerve is reunited after division or the destruction of its function by disease, the more certain, prompt and satisfactory will be the union and the restoration of function. In facial palsy, the spinal accessory is to be preferred, if for no other reason than the fact that the peripheral end can, without unusual difficulty, be stitched to the descendens hypoglossi, and with practically no additional dissection than is necessary in spinofacial anastomosis. The descendens is a little smaller than the spinal, but that is not an important objection. The spinal is a little smaller than the hypoglossal, but that is no disadvantage in facial anastomosis. Complete section of both nerves and end-to-end anastomosis are to be preferred. Splitting is objectionable, because axis cylinder end-to-end apposition is necessary to regeneration, and is uncertain in splitting. "Implantation of one end through a slit in another is unscientific."[3] Transverse division of half the diameter of a nerve and then splitting the proximal end for anastomosis with a peripheral nerve, end to end, may be justifiable in some cases as was done by Ballance in one case with the spinal and peripheral hypoglossal.

His statement that symmetrical and perfect facial expression is more certain with complete division of the nerves is worthy of the highest consideration. The best technic for exposure of the facial nerve is along the lines followed in the subject of this paper. It should not be approached through the body of the parotid gland, for that would needlessly endanger the integrity of the nerve which, soon after entering the gland on the under surface posteriorly, bifurcates and gives off other smaller but important branches. Besides, there would be the danger of annoying hemorrhage.

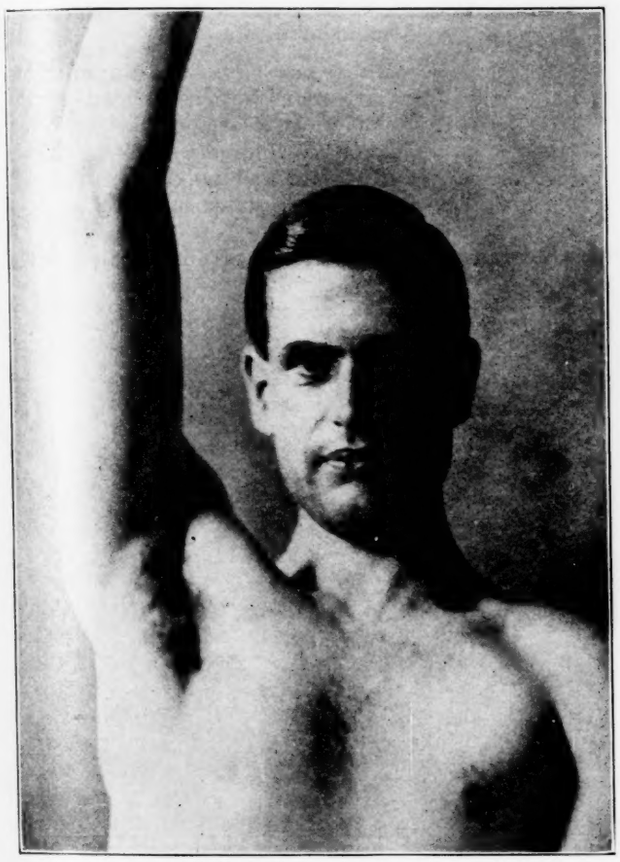


Fig. 5.—Patient, five months after operation. Arm and shoulder elevated with equal facility three months after operation. Note improvement in face and expression.

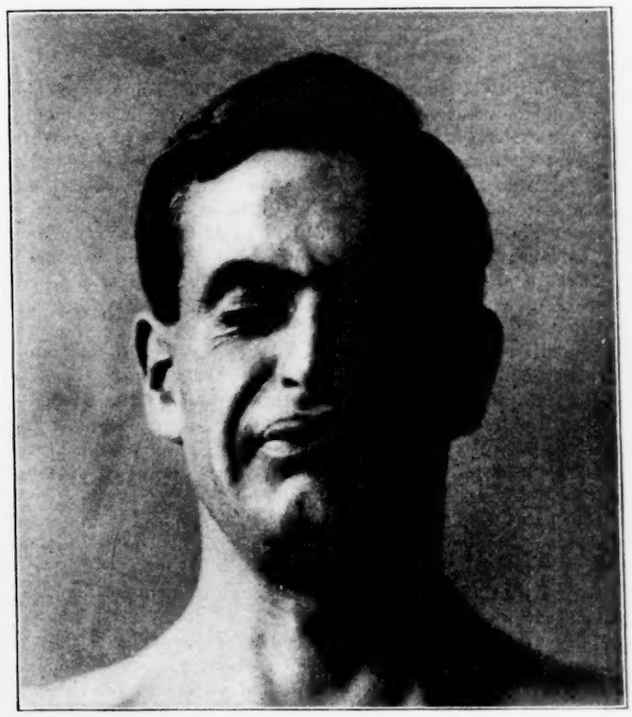


Fig. 6.—Patient, six and one-half months after the operation, showing voluntary action of facial muscles including eyes. Note deficient action of right corrugator supercilii.

There are many unusually interesting physiologic and pathologic problems involved in the surgery of the nerves, none more novel than that of associated movements from the anastomosis of one motor nerve to another serving different groups of muscles.

Why should movement of the shoulder muscles, in spinofacial anastomosis, produce simultaneous movement of the facial muscles? The nerve supplying the former is cut and diverted to the latter. Hereditary habit must be a potent influence. Will the cortical and ganglion centers reeducate the nerves and muscles in the performance of new duties? With the aid of the will and voluntary habit, it is probable.

In the anastomosis of nerves, it is necessary to make some provision against the encroachment of excessive connective tissue production. Egg and Cargile membrane

4. Landois: Physiology, Ed. 10, p. 635.

are recommended. Murphy has buried the ends in fascia or muscle. Cargile membrane is very thin and delicate, yet believed to be sufficiently resistant to meet the indications satisfactorily. "It is prepared from the peritoneal lining of the ox or other similar animal," by Johnson and Johnson. Nerve anastomosis is one of the most practical and beneficent of modern operations. No operation is more certain and successful in the absence of infection; with infection, none more certain to fail. In final results, it is one of the distinctive triumphs of recent surgery.

930 Pennsylvania Avenue.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. PRIMROSE AND GRANT

DR. JOHN T. BOTTOMLEY, Boston: The subject of surgery of compressive paraplegia is now in the developmental stage. No one man has had sufficient experience to give him a great deal of first-hand knowledge on the subject, so that any one who has had some experience in this line should contribute it for the benefit of all. It is only from a study of many cases that general laws can be made for future guidance in this particular field. We know that while certain cases, perhaps a great many, are not helped by operation, yet some few cases are helped in this way. We know, further, that previous to operation we cannot in many cases say which of them will be and which will not be helped by an operation. Here, then, is a field where exploratory laminectomy is often indicated. With careful technic the operation is not dangerous to life, and with careful handling of instruments and tissues the patient's condition will not be made any worse. Therefore, I plead for exploratory laminectomy in many of these cases.

One point Dr. Primrose did not touch on in the non-traumatic pathology of compressive paraplegia is the occasional presence beneath the dura of small collections of fluid well localized in thin-walled cysts. Some of these cases have an antecedent history of trauma, some have not. But an adult, usually of middle age, who has slowly progressing paralysis, usually of the lower limbs, with, perhaps, more or less paralysis of the upper limbs as well, and an indefinite, variable degree of sensory disturbance, will sometimes be found to have, if an exploratory laminectomy is done, such a collection of fluid beneath the dura. When this is removed, the patient in many instances recovers, but recovery, as a rule, is slow. Yet any gain in these particular cases is well worth the attempt.

DR. FRANK WARNER, Columbus, O.: Dr. Bottomley seems to think that any one who has had even a limited experience in this line of work should report his cases. I have had some experience in compression from Pott's disease, and I was very glad to hear Dr. Primrose recommend operation in such cases. We should not delay too long in trying over-suspension or any other treatment tending toward the relief of compression. It would be better to make an early laminectomy, and I have been very well satisfied with the results obtained in that class of cases.

Another class of cases, in which it seems to me well to operate, is the one Dr. Murphy mentioned—in vertebral fractures, in which the bone has penetrated the cord and in which we might think that possibly the cord has been crushed. Yet occasionally we find at the operation that it is only a spicule of bone that has entered the cord, or that a portion of the cord has been crushed, but by relieving the compression these patients recover. Anyway, these patients die without operation, and therefore it seems to me that we should give the patient the benefit of the doubt and operate.

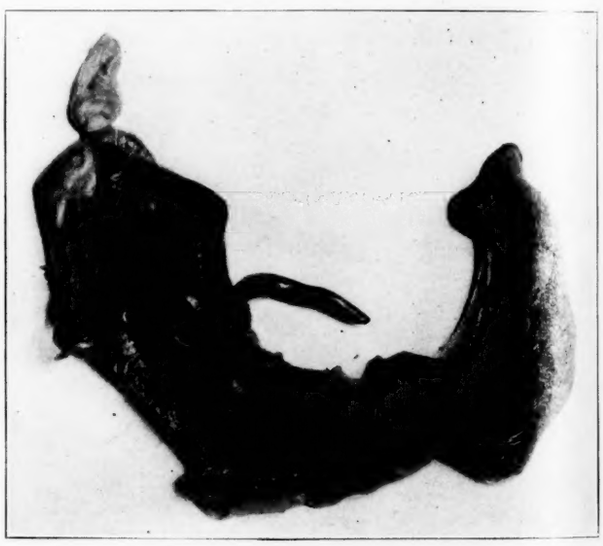
DR. A. PRIMROSE, Toronto, Can.: The speakers have apparently agreed with me. The discussion has emphasized the point brought out, that we should employ exploratory laminectomy when we are in doubt, and that was what I was particularly anxious to insist on in my paper.

DR. W. W. GRANT, Denver: I would like to emphasize the necessity of the use of the spinal accessory nerve in preference to the hypoglossal, for the reasons given. It has been claimed that one might use the trapezius branch of the spinal accessory only. That has been done in Europe in cases of primary facial paralysis. I do not believe, however, that it is a wise procedure, because the trapezius branch makes a wider gap between that and the facial, and it must be severed in the posterior rather than in the anterior triangle. I do not believe that the splitting operation is justifiable. The whole nerve, both proximal and peripheral, should be used in this anastomosis. I have taken pains to dissect this region before doing the operation, knowing the importance of preventing the paralysis that results from the operation as ordinarily performed. I regard paralysis of the tongue as being more serious than paralysis of the trapezius muscle. I would do this operation even if I could not use another motor nerve for the peripheral, as in this case.

INTESTINAL OBSTRUCTION, DUE TO ASCARIS LUMBRICOIDES, WITH AUTOPSY

CHARLES WHELAN, M.D.
Surgeon to St. Vincent and Hillman Hospitals
BIRMINGHAM, ALA.

The case report with its post-mortem findings demonstrates the fact that the roundworm is at least worthy of consideration as an etiologic factor in the production of bowel obstruction in children. The case should further demonstrate the fact that no cautious surgeon should ever pass unnoticed the statement of an anxious mother that "the baby has worms," in casting about for an explanation of the suspected trouble in certain obscure abdominal cases occurring during childhood. Then perhaps fewer certificates would be issued in which the cause of death was attributed to "intestinal paralysis, superinduced by toxemia."



Section of obstructed intestine after opening into lumen, showing worms.

History.—On Aug. 4, 1910, I was called in consultation with Dr. Elwyn Ballard to see E. J. W., a male child, aged 5½ years. The following history was given me by the child's mother: From the date of its birth the child had been unusually strong, never having had even the diseases common to childhood, except measles, from which it promptly recovered. About April 1, 1910, however, according to the mother, the child became peevish, restless at night, had poor appetite, sallow complexion and complained frequently of stomach-ache. She said that there was always more or less "swelling in the

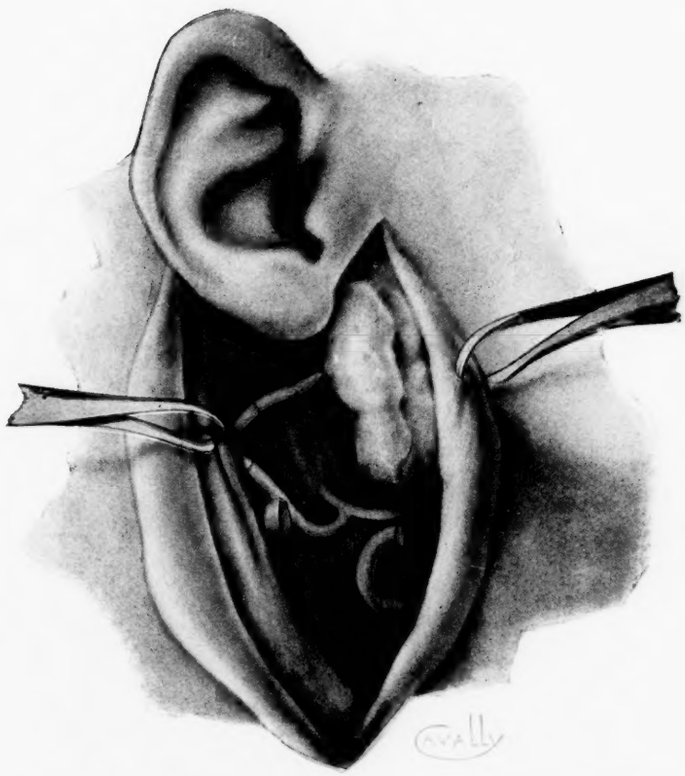


Fig. 2.—Spinofacial anastomosis, and peripherospinal to descendens hypoglossi; also showing hypoglossal where it turns forward and the descendens leaves it.

stomach," and she thought that "it was worms." During all this time the baby was obstinately constipated, but in no stool was a worm ever noted. On Aug. 2, 1910, about 11 p. m., the child awoke crying with pain in its stomach, and soon afterwards began to vomit. Castor oil was at once administered by the mother. The dose was repeated at noon on August 3. The vomiting continued and there were no bowel movements. On the morning of August 4 the child's abdomen appeared greatly distended, and accordingly the mother gave another dose of oil followed by an enema, with no result. Then it was that Dr. Ballard was called in. He found the child in convulsions, which, according to the mother, began about an hour previous to his arrival. The doctor found the abdomen greatly distended, vomiting was incessant, pulse rapid and extreme shock evident. At 11 p. m. on August 4 I saw the patient with Dr. Ballard. At 11:20 p. m. the child had a convulsive seizure and died. An autopsy was asked for by me and permission was obtained to explore only the abdominal cavity.

Autopsy.—The body was that of a reasonably well nourished, white, male child, apparently 3½ feet long, apparent weight about 40 pounds. Rigor mortis beginning. The body presented no malformations, and on its surface there were no marks of discoloration. The entire abdomen was greatly distended. On entering the peritoneal cavity through the median line a small quantity of a straw-colored fluid escaped from the incision, followed by an immediate outburst of distended intestines.

Stomach: This organ was greatly distended with gases. On opening into its interior a small quantity of a dirty brown liquid of fecal odor was present. Pylorus was open.

Duodenum: This was greatly distended with gases. No fecal contents were found on opening the bowel.

Jejunum: The upper portion was greatly distended, and on opening into its interior there was found a quantity of liquid fecal material. The lower 6½ inches of this portion of the bowel appeared to be obstructed with an impacted mass of some kind. To the touch the mass was firm. Inspection of this part of the intestine revealed a more or less collapsed condition, with varying circumferences along the continuity of the bowel. For the first 2 inches the circumference was larger than in any other portion of the obstructed bowel, then there was a constriction. About an inch further down there was a distinct "kink," then from this point on for 2 inches the bowel contained a mass. On opening the bowel, a "bunch" of roundworms was found, completely filling in the lumen or the first 2 inches. Two worms were found lying side by side in the direction of the long axis of the bowel through the constricted portion. The lower 2 inches of the bowel were also occluded by a "bunch" of worms similarly arranged to those found in the first 2 inches of the jejunum. This is well shown in the accompanying illustration.

Ileum: This portion of the intestinal canal was collapsed, and on opening into its interior no gases or fecal contents were noted. About 6 inches from its beginning the bowel presented a well-marked diverticulum.

Organotherapy in Scleroderma.—The *Annales de Dermatologie*, 1910, page 3383, contains a report of extensive work in this line by E. Roques at Toulouse. He tried extracts of various organs in treatment of scleroderma and found a decidedly favorable effect from thyroid treatment in 63.73 per cent. of 67 patients with diffuse scleroderma and in 70 per cent. of 10 patients with the circumscribed lesions. Thyroid treatment is not, he says, the specific in scleroderma which it has proved in myxedema, but the large proportion of improvements and cures justifies a trial of it. The best results were obtained with small doses given regularly for months and years and commenced early, while the tissues still resemble myxedema. Extracts of other glands demonstrated comparatively slight efficacy. The scleroderma may be due to various causes but a tentative course of thyroid treatment is certainly indicated as this may happen to hit the predominant factor in the individual case in question. The work of other clinicians in this line is also reviewed.

A SIMPLE AND EFFICIENT MEANS OF APPLYING ARTIFICIAL HEAT

STEPHEN E. TRACY, M.D.
Gynecologist to the Stetson Hospital
PHILADELPHIA

Following operation when the patient is relaxed, the temperature subnormal, and the functional activity of the organs diminished, it is an essential that reaction should be brought about promptly and every means which will promote this result should be employed.

This relaxed abnormal condition of the patient is best overcome by the application of external heat, which is the

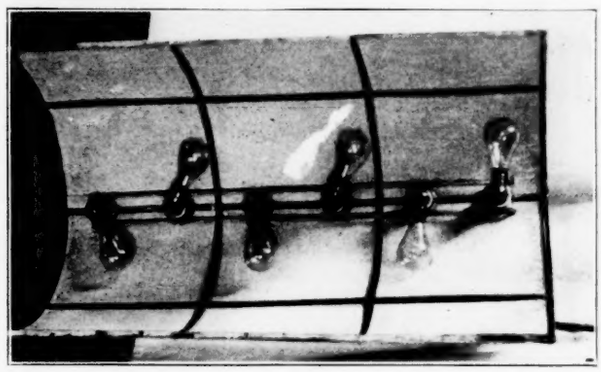


Fig. 1.—Asbestos cradle containing incandescent electric lamps for applying heat to patients in shock, post-operative depression or collapse, or for producing diaphoresis.

Fig. 2.—Apparatus in position over patient and connected with electric light circuit.

greatest of all stimulants at this time. Artificial heat is usually applied by placing several hot-water bags about the patient, which is quite sufficient when there is no shock and the temperature is normal. A very small portion, usually the edge of the hot-water bag, comes in contact with the patient, and as a rule the water in the bags is only warm, as the nurses will not use hot water for fear of burning the patient, which means expulsion from most training schools.

In cases in which the patient is weak, advanced in years, or in a septic condition, or in which the operation

has been prolonged, or much blood has been lost, or for other reasons there is considerable shock, we have found that the most simple and efficient means of supplying artificial heat is by electricity.

For this purpose we use a frame covered with asbestos, supplied with six or eight 16-candle-power electric lamps, which extends from the shoulders to the feet of the patient. When the patient is returned from the operating room she is wrapped in a blanket, the apparatus is placed over the body, the ends covered with blankets to retain the heat and the light turned on. In a few minutes the surface of the body is warm, reaction

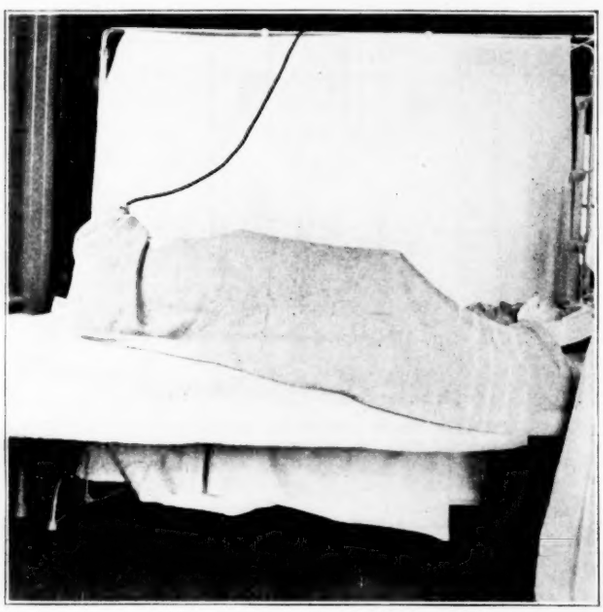


Fig. 3.—Method of retaining heat by covering with blanket.

takes place promptly, and, in the large majority of cases, the necessity for hypodermic medication is eliminated.

After ten or fifteen minutes it is usually necessary to turn out one or more lamps, as the amount of heat is excessive and will cause profuse perspiration.

The apparatus is used also in cases in which it is desirable to keep the skin moist, as in renal insufficiency.

The appliance is simple, inexpensive, light and easily moved about, and can be connected to any electric lamp fixture.

1429 Spruce Street.

A CASE OF FOREIGN-BODY CALCULUS

I. S. HIRSCH, M.D.

Pediatrist to the Jewish Maternity Hospital

NEW YORK CITY

History.—F. D., girl, aged 5 years, was brought to the children's clinic of the Beth Israel Hospital with the following history: Except for an attack of measles at the age of 2, she had been in good health until seven months ago, when she seemed to have lost control of the bladder function. The incontinence was present both day and night. During the last two months the urination has been extremely painful, the pain being more severe toward the end of the act and being referred to the vulva. There has never been any pains in the loins, nor has there been hematuria. During the past six months the child has been examined in several dispensaries and has been treated for enuresis, cystitis and vaginitis.

Examination.—General physical examination showed an apparently normal, though pale and under-sized child. Local examination disclosed a reddened and congested vulva, but no vaginal discharge. The mouth of the uretha was edematous and pouting. Bimanual rectal examination showed a movable mass about the size of a walnut, apparently in the bladder.

Urine: The urine was clear, of an amber color, had a faint acid reaction and a specific gravity of 1025. Albumin and casts were absent. A moderate number of red and white cells and a few crystals of calcium oxalate were present.

Bladder Examination: A sound was inserted into the bladder and the distinct grating sensation characteristic of stone was obtained. A radiograph of the pelvis revealed a large stone within the bladder. In the center of the stone a shadow of a rod-like piece of metal was apparent.

Treatment.—The child was referred to the Beth Israel Hospital and was operated on by Dr. L. J. Ladinsky, who removed, by suprapubic cystotomy, a stone weighing 5.5 grams. The recovery was uneventful. On section a pin was found within the center of the calculus. Chemical analysis showed the stone to consist of calcium phosphate, with magnesium phospate and calcium oxalate. The crust, which had a brownish appearance, was entirely phosphatic.

Since it would be entering into too large a domain to undertake even a brief consideration of the subject of foreign bodies in the female bladder, only a few points, such as have a direct bearing on this case, will receive consideration.

MANNER OF INTRODUCTION OF THE FOREIGN BODY

It is almost impossible to give a positive answer to the question of how in this case the pin reached the bladder. Although the vast majority of the foreign bodies found in the female bladder are introduced during masturbation, and though it is generally recognized that this vicious practice is prevalent among girls far below the age of puberty, it is nevertheless difficult to conceive that even a child would employ a sharp object like a pin for

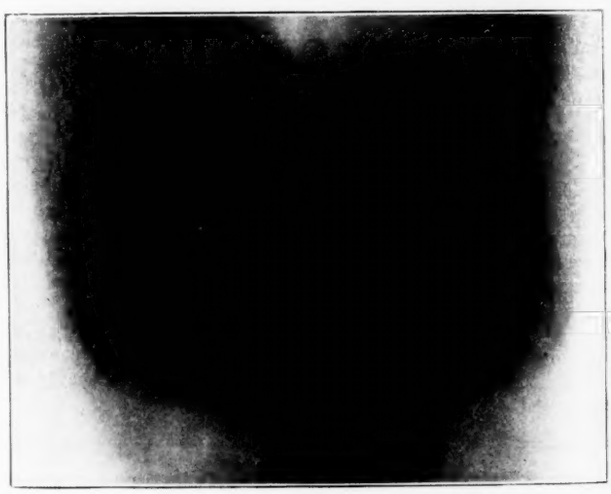


Fig. 1.—Radiograph showing calculus in bladder. Pin discernible as dark line through shadow of stone.

the purpose. The bodies usually utilized for these practices are smooth, dull and rounded.

Foreign bodies have been accidentally introduced by attendants while dressing children. Such an occurrence may be safely ruled out in this case, because of the insistence of the mother that only safety pins were ever used in the child's clothing. Malicious introduction is to be considered as an explanation of the way in which such foreign bodies reach the bladders of young children, the malicious practice being similar to that which finds its expression in the "point-tying" practice of male children.

There is another way in which foreign bodies may reach the bladder, namely, by perforation through the intestine. Authentic cases have been recorded in which sharp objects entered the bladder in this way. Chopart, for instance, records several post-mortem examinations in which a fistulous opening was found through which a foreign body had passed from the intestine into the bladder. Van der Viel reported the case of a boy of 8 years who swallowed a pin, and after several years of suffering with difficult and painful urination, the pin, encrusted with calcareous matter, was extracted from the bladder. Austin reported the case of a boy of 14 years who suddenly developed the symptoms of cystitis which persisted for a year despite treatment. The diagnosis of a foreign body in the bladder was made and a long pin, the shaft of which was covered by a calcareous deposit, was extracted. The patient then recalled the swallowing of this pin about a year before the bladder symptoms appeared.

In these and similar cases it is impossible, without a demonstration of such a pathologic condition as would permit the entry of a foreign body from the intestine into the bladder, to state with certainty that this actually occurred. The story of the affected individual cannot be depended on, while the motive for withholding the true history is apparent. Still it is important to remember that this method of entry is a confirmed possibility.

Fig. 2. Radiograph of calculus showing smaller formation over point.

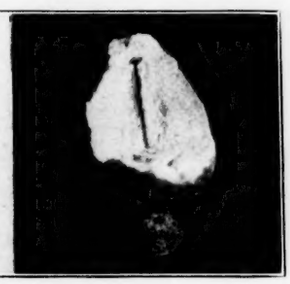


Fig. 3. Photograph of calculus showing pin *in situ* and granular condition of brownish surface.

ENCRUSTATION

There is one pathologic process of considerable interest in the history of foreign bodies in the bladder, namely, encrustation. A variable period after the entry of the foreign body successive layers of urinary salts may be deposited on it, resulting in the formation of a calcareous structure which gives a train of symptoms identical with that given by ordinary calculi.

Ebstein divides calculi into two classes, primary and secondary, basing the classification on the conditions of the urine. If the formation and development takes place in undecomposed urine the calculus is classed as primary, while a calculus which is formed from the ammonium urate, triple and earthy phosphates precipitated by the ammonia formed during alkaline fermentation, is a secondary formation. The great majority of foreign body calculi belong to the latter class. In our case the cystitis was accompanied by a slightly acid urine, and the encrustation consisted of substances found in such urine.

Calculi do not consist merely of amorphous or crystalline deposits alone. Ebstein has shown that an organic framework is essential. Schéde has proved experimentally that crystallization takes place through the agency of the colloids of the urine which act as a matrix for the crystalline deposit.

The crystalline deposits formed through the agency of the colloids of normal urine are reversible precipitates because they may be redissolved by simple chemical means. Normal urine contains no colloid which is not thus capable of being redissolved after precipitation. Fibrinogen, however, such as is produced by inflammation, is just such an insoluble and irreversible colloid as will furnish a stroma suitable for the formation of permanent crystalline deposits or calculi. A foreign body in the bladder becomes encrusted, therefore, only as a result of the inflammatory process it initiates, and the nature of the crystalline deposit depends to a great extent on the reaction of the urine associated with the cystitis. This theory regarding the pathogenesis of urinary calculi explains the variability in the rapidity of the production of a calcareous deposit about foreign bodies. In some cases encrustation will appear in 48 hours, while in other cases it will not occur for months or years. It depends to a great degree on the extent and severity of inflammatory reaction. The inflammation in turn depends on the nature and condition of the foreign object, and the condition of the bladder prior to the entry of the substance.

Sooner or later after the entry of the foreign body a cystitis is set up, and when sufficient colloid has been produced to serve as a stroma for the urinary crystalloids, these are deposited in successive layers on the foreign object. The shape of the resulting calculus is considerably influenced by that of the foreign nucleus. Such calculi may be spherical, ovoid, fusiform or irregular. Once begun the process proceeds very rapidly, and these concretions may grow to considerable size in a short time. Encrustation usually begins in the center of the foreign body, the ends remaining free, and if the object is long and slender, like a needle, a fusiform calculus is thus formed. Frequently the ends of the object remain entirely free. This may be due to the constant contraction of the bladder walls, for objects which are long and rigid usually lie transversely with their extremities against the walls of the organ. The resultant friction prevents the accumulation of deposits. When one end of the foreign body is pointed it may become imbedded in the bladder wall, and then the free end alone becomes encrusted. Exemption of the end from encrustation may also be due to its position, *e. g.*, in the urethral orifice. After sufficient deposition has taken place in the middle of the object so that the ends become less mobile, one or the other end may also become encrusted, forming a double calculus similar to our specimen.

DIAGNOSIS

In this case the symptoms were suggestive of enuresis, and for this condition the child was treated elsewhere. A rectal examination, which probably had not been previously made, but which is an important and essential procedure in the determination of the true significance of the urinary symptoms, disclosed a probable tangible cause for the symptoms. The distinct grating sensation elicited by the sound rendered the diagnosis of stone in the bladder most probable. The radiograph furnished conclusive evidence on this point. From the bimanual examination and the sounding alone it was evident that the calculus was of large size. This, taken in conjunction with the absence of a story of renal affection and the brevity of the period of suffering, made it probable, even before the radiograph disclosed the actual condition, that a foreign body was the nucleus for the calculus.

56 East Ninety-Third Street.

THE SUBMUCOUS RESECTION OF THE NASAL SEPTUM *

CLYDE E. PURCELL, M.D.
PADUCAH, KY.

The increased interest in the pathology and treatment, including operative procedures, of the nasal septum since 1902 seems to justify a review of the subject in order that erroneous conceptions then held can be righted, that the best advice for the patient's welfare can be given, and that the best operative procedures with fewest post-operative drawbacks, dangers and discomforts, can be promulgated. It is time, too, that absolutely impartial judgment be passed as to what is best and what is not best for the future of nasal surgery. Every operator, in the light of extended experience, has corrected faulty impressions and certain operative steps that have not stood the test of time.

Fig. 1.—Showing position of instruments within easy reach of the operator.

EVOLUTION OF THE RESECTION METHOD

It was formerly the custom to place a saw either above or below a spur or acute bend in the cartilaginous or bony septum, and cut it off, sacrificing the mucoperichondrium and leaving a bare surface. This was followed by annoying scabbing, a dry condition of the nose, slow healing and a production of granulating tissue. Often the saw left a permanent perforation, and in few instances did free nasal breathing result. Only in very selected cases have any of the special methods named for the men who originated them proved of lasting benefit.

In talking to other rhinologists it was learned that the Asch procedure was disappointing both to the patient and operator, in that pain during convalescence was excruciating and stenosis unrelieved. This has also been my experience. Before the day of submucous resection, no doubt all of us tried the method of elevating the mucous membrane over a ridge or spur, followed by either sawing off the projection or cutting it away with a gouge. In common with the other methods, this nearly always failed to establish a patulous nostril.

These measures succeeding in few cases, and then in special and rare deformities, investigators began the search for a method that could be applied to any character of deviation or deformity. Like the locomotive, the submucous resection is not the acme of a single conception. Many have worked at it and each has added his mite.

IS THE DEVIATED OR DEFORMED SEPTUM INJURIOUS TO EYES, EARS OR THROAT?

At first thought it might seem extravagant to venture the statement that a bent septum could have any deleterious effect on the eyes, but clinical experience forces us to the conclusion that it has. Patients of my own are recalled who were able to lay aside glasses that had been worn for years, after the remedying of a septal deformity, with complete relief. Asthenopia, and supra-orbital, unilateral, as well as general headaches, have been permanently relieved, apparently, by removing pressure contact of septum and turbinates or by straightening the septum. Stubborn cases of headache and eye pains that have resisted the usual ophthalmologic treatment have thus been explained, and the diagnosis later has been verified by correcting the pathologic condition in the upper anterior part of the nose.

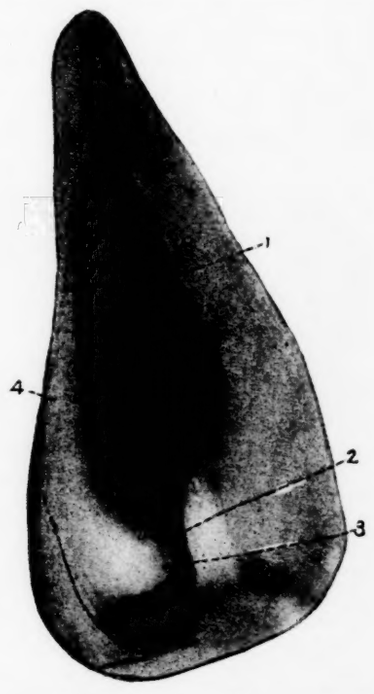


Fig. 5.—View of interior nose. Dotted lines show the direction and extent of the initial incision. Acute angle of flap shows on floor of nose. The incision allows ample room to elevate around the obstruction. 1. The middle turbinate. 2. The inferior turbinate. 3. Overriding cartilage. 4. Septum.

The influence of nasal obstruction in causing deafness and inflammatory and suppurative processes in the ear is generally recognized. The narrowing of the nasal passages prevents ventilation and causes congestion and stasis of the turbinates, which reduces the hearing by interfering with the tympanic circulation. This can be

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

demonstrated both from anatomic and clinical experience, and proper treatment of the nasal obstruction is usually followed by satisfactory hearing results.

It would seem that too little has been written on the influence of nasal insufficiency in relation to throat and larynx irritation. The origin of a large number of cases of chronic laryngitis can be traced to a nasal stenosis or disease in the nasal chambers. Following this enforced mouth breathing there is a lack of filtration, proper moisture is not maintained, and suitable temperature not established of the air supplied to the lungs. The arch enemy of free nasal ventilation—the deformed nasal septum—is thus indirectly responsible for much cough.

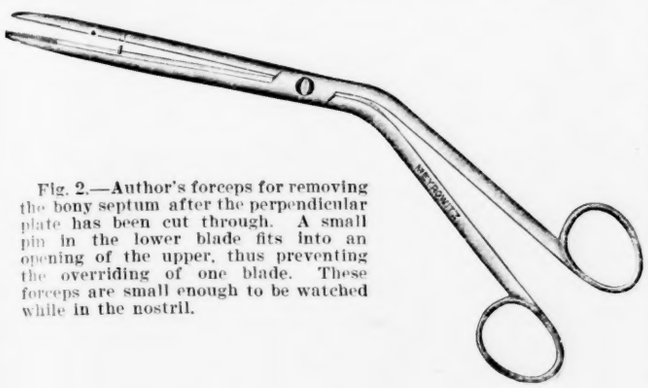


Fig. 2.—Author's forceps for removing the bony septum after the perpendicular plate has been cut through. A small pin in the lower blade fits into an opening of the upper, thus preventing the overriding of one blade. These forceps are small enough to be watched while in the nostril.

DO WE FEAR INFECTION TOO LITTLE?

Infection following surgery of the septum, turbinates or sinuses is such a rare occurrence that there is a disposition to fail to keep in mind its possibility. Infection of a mild type, no doubt, occurs in most cases. Streptococcic infection with fatal result has been reported. From the literature at hand, erysipelas infection has not been encountered. Therefore, the following case in my own practice would seem worth recording:

History.—Nov. 16, 1907, Mr. G., aged 37, farmer, complained of fulness in ears, tinnitus aurium and deafness. He had had trouble for some time but for the last few weeks had been worse with sense of fullness increasing. He was a mouth breather especially at night, and on the slightest exertion.

Examination.—Both drums were slightly atrophic and retracted. Hearing for watch was by contact; hearing for conversation was by approaching the patient, and speaking in a very loud tone. Tuning fork bone conduction was lengthened. Both inferior turbinates were enlarged and impinged on the nasal floor. An oblique bend and thickened maxillary crest extended in the direction of the sphenoid sinus pressing against the middle turbinate on the right side.

Treatment.—The lower portions of both inferior turbinates were resected. This procedure gave fair breathing capacity, and with cauterization relieved the tinnitus and fullness.

Subsequent History.—The patient returned in January saying there was still some stopping up of the right nostril. It was decided to remove the crest to its posterior limits by resecting the nasal septum.

Second Operation.—The operation was done Jan. 19, 1908. A vertical incision anterior to the obstruction—flap seemed unnecessary in this case—was made and the bony obstruction was fully removed. Packing was removed in 16 hours when it was found that the wound had closed by first intention. In 30 hours after the operation the patient began to have fever, headache, nausea, pain in the nose and face, general malaise, and swelling of face and neck extending down on the body, especially the glands of the neck being involved. As there had been influenza in his family he therefore accordingly diagnosed his affliction as "grip."

Source of Infection.—Ten days previously Mrs. B. had been operated on in the office for a chronic frontal sinus suppuration by the intranasal route. Erysipelas developed, Jan. 22. The before-mentioned septum, no doubt, was infected from this case, though all instruments and hands were, as we thought, thoroughly disinfected. It is interesting to note that the new wound developed erysipelas 2 days before a diagnosis in the sinus case was made. The true nature of this septal infection remained obscure until the frontal sinus wound showed erysipelas.

The infection of the septum ran its course leaving a perforation the size of a pea two-thirds of the way back on the bony septum near the floor. This has caused no trouble whatsoever and the patient is utterly ignorant of its presence.

Too much stress cannot be laid on asepsis in all particulars on part of operator and assistants, though it is not wise to attempt to disinfect the nasal chambers of the patient where all scrubbing and douching are worse than useless. The fact that the septum can be resected without infection in the presence of a suppurating sinus disease shows this structure to be practically immune to pyogenic organisms.

DOES RESECTION AS NOW PRACTICED LEAVE ANYTHING TO BE DESIRED?

It would seem from the favorable reports of the investigators and workers in the field of septal surgery and from the enthusiasm aroused and maintained since the appearance of Freer's first article that in the majority of cases the method is almost ideal. Yet there remain several questions to be settled by the court of last resort—further experience and verification.

To operate on a patient in whom there is a suspicion of a constitutional taint is to invite danger and defeat. To operate on children yet in the formative period of life is a question not fully settled. Operators of wide experience argue for and against. I would not hesitate to operate on a child of 7 or over in whom there was an extreme deviation with nasal insufficiency, believing it safer to do so than to permit the little patient to suffer the inconvenience of mouth breathing and dangers of lack of facial development. To operate on patients of

Fig. 3.—Author's cartilage knife and hoe elevator. With this knife the primary incision through the mucous membrane—both vertical and horizontal—and cartilage may be made. It is also useful to begin the elevation on the opposite side through the cartilage cut. The whole cartilage may be removed under direct guidance of the eye with it. It aids greatly in the elevation of the flap.

Fig. 4.—Author's double chiselled elevator for elevating the flap. It is useful for working down in the acute angle on the floor of the nose, and around acute bends especially of the crista.

advanced age or those without the capacity to overcome the inconvenience of a somewhat long and tedious procedure is also questionable.

There is little liability of a permanent perforation of the septum if the submucous resection is carefully carried out by an experienced, painstaking operator. It is an operation applicable to any kind of deformity.

From my experience it would seem that the initial incision is the key to the successful termination. The crust formation following all the incisions, so far proposed in many cases, is objectionable. This is a point

which all the workers, it is hoped, will endeavor to improve and perfect.

THE DECISION TO OPERATE

It is a well-known and recognized fact that not all deformed septa need surgical intervention; insufficient breathing capacity is the indication. This is determined by stopping up one naris without interfering with the normal relation of the alæ.

If sufficient air to supply the lungs for five minutes with lips closed without inconvenience to the patient is obtained the other naris is tested in the same way. This is the ideal nose, and one that will scarcely need be seen by a rhinologist. Of course, there are noses with difference in breathing capacity of the two chambers that do not require surgical treatment.

Before the day of our present method of operating much criticism was heard of nasal surgery and we had to admit its inefficiency. We have gone the gamut of crushing, cauterizing and sawing. But this is a period of evolution, and lucky is the man who can so plan and execute the condition of his environment as to escape criticism. Before accepting the responsibility of deciding that an operation should be done, let us take an inventory of present and past methods and their possibilities and see if we merit some of the criticism. Can we always say it is a trivial affair, free from danger and complications? Is it best and wise to inform the patient of a possible perforation even in the most experienced and skilled hands? Suppose a perforation occurs, with or without this advice, what of the legal aspect? Would the doctor be liable or has our experience been extensive enough to establish the impossibility of avoiding perforations?

COMPARATIVE STUDY OF NEGRO SEPTA

In a personal examination of 563 negroes in Paducah, of all ages, I have found the extreme deflected septum in not a single case. The work of the adult negroes was that of barbers, porters, roustabouts and the great army of loafers that frequent the dives. True, I did not find in every case a perfect plane, or absolutely vertical septum. The maxillary crest was prominent in 15 cases, but in only one case was it sufficient to cause nasal stenosis, which was not constant. This was associated with a vertical bend of the cartilage well up in the vestibule, and was found in a half-blood who had many American facial characteristics. Heredity, no doubt, is the most logical explanation of this case. One child, an octoroon, was found with adenoids, 18 had atrophic rhinitis, but altogether it was a fine lot of septa and nares free from disease.

One negro came to me in the early part of 1909 saying he could not get air through one nostril and giving a history of a blow on the nose several years before. Examination showed a bend in the perpendicular plate and quadrangular cartilage.

A SUMMARY OF ONE HUNDRED AND TWENTY-SIX CASES: ALL PRIVATE, ONE PERFORATION ONLY

In not a single case was it found that there was only a cartilaginous bend[1]. Bony deformity was associated in all cases and therefore required rather extensive work. One patient was operated on twice as the removal of the cartilage did not result in full nasal patency. This was one of my very early cases. In no instance was there a change in the nasal profile. This seems to be entirely preventable and its occurrence is inexcusable. There was one case, previously referred to, of infection from erysipelas which resulted in a permanent perforation the size of a pea—the only instance. In one case there was a circular absence of cartilage the size of a dime. This was attributed to ulceration from picking which the patient admitted doing. At time of operation there was no evidence of ulceration and no perforation was made, though for a few moments the condition was puzzling. Cocain and adrenalin had no effect on the bleeding in one case.

A large percentage—forty-seven patients, had previously had some other procedure—saw, turbinectomy, cautery, and Asch operation to give nasal respiration. One of these had a transcontinental experience of 12 attacks of these measures, including the Asch operation, with only temporary improvement. The submucous resection gave ample breathing room with no perforation. Seventeen operations were done to relieve hay fever when there was pressure contact of septum and turbinates, and so far relief has been complete, with the exception of one patient who was much improved.

THE INCISION THROUGH THE MUCOUS MEMBRANE

Whatever may be said or written of this operation, it would seem that the fulcrum of ultimate success is the primary incision. Objections to the Hajek incision are that it does not give access to the deeper parts and the elevation is difficult on the anterior free border; to the Killian operation the objections are the danger of a permanent perforation when the cartilage is cut through, limited room for instrumentation, and a tendency to scab formation. Of the incisions thus far described that of Freer is best planned. While ordinarily this gives ample operative interference, yet, in my experience, it is followed by rather extensive and prolonged scab formation. To overcome the inclination to scab formation and the tendency to retraction on healing of the flap, and in order to expose the crest more completely, I have used for the last year the following incision with ideal results (Fig. 5): Beginning well up on the septum with the ala nasi lifted, a vertical incision is carried down to and about half across the nasal floor. This incision has to be made, or at least finished, with an angular knife. From the lower end of this, a slightly curved incision in a horizontal direction is brought forward more in the cutaneous than in the muco-cutaneous structure (Fig. 5). This acute angle flap when elevated gives easy access to the crista. Two sutures are inserted in the vertical cut and if need be one in the horizontal. The two sutures prevent retraction of the flap in healing. Should the apex retract, the squamous epithelium is on the floor of the nose and therefore no scabs will form. The horizontal incision will not form crusts or scabs because it is in the skin. The incision is preceded by a few drops of cocain and adrenalin hypodermically.

In order to insure light for the operation, an extra rheostat and headlight should be in position; a storage battery is also in readiness. A fire in the neighborhood of the building or one destroying the current cannot then delay the operation, as happened to me before these precautions were taken.

THE PACKING

A piece of surgeon's gauze cut the proper size for the case in hand and coated on one side with suitable ointment, is then placed with this side next to the septum

1. Since reading this paper, I have had one case in which removal of the cartilage was sufficient for perfect breathing.

and smoothed out. "Strips of absorbent lint are then placed in, beginning on the floor" (Freer).

As soon as one strip is in and while patient is in the recumbent position liquid petrolatum is dropped in and continued after each piece, more petrolatum being used as the packing is built up.

It is the rule not to have a drop of bleeding following the removal of the packing in 20 hours. The piece of gauze may remain 2 or 3 days and does not interfere with breathing. This ointment does not melt at the temperature of the body and there is no displacement of flaps on removal of packing.

DEDUCTIONS FROM PERSONAL EXPERIENCE AND FROM THAT OF OTHERS

If it were possible for one to be liberal, and yet maintain that there is but one way to remedy septal deformities, radically through some form of mucous membrane incision, I should like to take this position. It is recognized, too, that to do good work one must have well-directed enthusiasm. It would seem from my experience —none of my 126 being clinic cases—that the operation is peculiarly fitted for private patients, all of whom are very grateful for the relief it brings.

Free access to the nose is essential. Therefore, the character of the incision is highly important, for here is the focus of success. At least two sutures are necessary (Fig. 5). No fear need be entertained of the sinking in of the bridge of the nose if the operation is well planned and executed. Perforation, with the flap method followed by suturing, need not occur, for it is hardly possible that two perforations opposite each other will happen. Should it happen, suture.

Spare the turbinates, cauterize little, and meddle seldom with the nose after the operation. A nose with stenosis, like a plugged-up pipe, has to be opened from end to end, therefore, to secure full breathing capacity sometimes requires extensive resection which uses up all one's attention, energy and judgment.

Fraternity Building.

THE RESULTS OF THE OPERATION OF SUBMUCOUS RESECTION OF THE SEPTUM IN PRIVATE PRACTICE*

FRANCIS P. EMERSON, M.D.
BOSTON

In order that we may reach definite conclusions in regard to the value of the submucous resection of the septum, it is necessary that we should know what indications, in the operator's opinion, justify its performance. These can be classified under two heads: first, the mechanical indications that lead to the selection of a particular operation in order that we may remove undue redunancy, correct displacement and overcome the resiliency of the septum; this division will not be discussed, as it is understood that all cases in this series were corrected by means of the window resection method; and second, the clinical indications.

It is obvious that not every deflected septum is necessarily pathologic, for we must bear in mind that the patient does not consult us for the deflection itself, but for conditions that have resulted from the unequal ingress of air, which has produced hypertrophies, contact, insufficient drainage or active infection of the functional tissues of the nasopharynx or the accessory sinuses. If this position is accepted, resection alone is seldom indicated, and, on the other hand, no operation which does not remedy the associated complications will relieve the patient. Statistics in regard to the success of the operation, gathered two, three or four years afterward and based on the judgment of the patient, presupposes that during this time there has been a normal function of the nasopharynx, for any deviation therefrom will, in his mind, be an incomplete result. When we consider the physiologic activity of the nasopharynx, its innumerable reflexes, its secretory activity, and its intimate relation with so many other highly specialized organs of the body, this is a severe test. For this reason, any results claimed for or against the operation must be based on the individual equation; that is, must depend on whether or not the particular operator not only has appreciated fully the mechanical details of the procedure, but also recognized and remedied the associated lesions which have resulted.

The genius of Killian, Jansen, Freer, Ballinger, Hajek and numerous other writers, who perfected the technic, and furnished explicit directions for each step, leaves no excuse for failure in our mechanical work on the septum, but the functional restoration of resulting abnormal conditions must be based on a study of each individual case. With a perfectly straight septum, the patient may be no better off than he was at first, while the partial or complete removal of a cystic second turbinate, whose function has been destroyed, may preclude the necessity of correcting its original cause. Again, many compensatory hypertrophies, particularly of the posterior ends of the turbinates, will disappear after being relieved of their over-activity by correcting the septum and equalizing the air current. Any indication for operation, therefore, must take into consideration the present functional activity of the mucous membrane, the glandular elements and the questions whether there is obstruction to the drainage of the accessory sinuses, or whether there are points of contact that interfere with breathing, over-stimulate by irritation the active tissues of the nose, or cause compensatory hypertrophies.

The fact that the center of development of the septum is situated so far forward in an area usually included in the operative field, has prevented me from advising any extensive resection in children under the age of twelve.

In the following series of cases the Killian incision was employed, and in no case was it sufficiently anterior to run the risk of a dropped nose. In my experience, more depends on ample space between the middle turbinal and the cushion of the septum for freedom in breathing than on a perfectly equal intake of air anteriorly. If, therefore, the deflected portion of the septum is straightened, so that there is not a recurrence of the compensatory hypertrophy of the anterior end of the middle turbinate after being once corrected, the functional results will be just as good as though we were able to make the anterior nares of equal diameter.

I did not believe in sacrificing the entire middle turbinal, but drained one or more cells or removed the anterior third as indicated. The inferior turbinate, also, was trimmed on its lower border, but not removed. The openings of the various sinuses were carefully explored, particularly that of the nasofrontal duct, to see that drainage was ample. Any pronounced difficulty in respiration was generally found to have some abnormal

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

conditions within the "vicious circle of Ballenger." In any case with a history of attacks of vasomotor rhinitis, particular attention was paid to freeing the tissue under the cushion of the septum, together with a careful search for points of contact or pus irritation from a diseased sinus. Following the observations of Schadle, an overflow from the antrum was looked for particularly, but was not found as an exciting cause more often than a discharge of pus from the frontal sinus or ethmoid cells.

In this series of cases any deflection involving the lower half of the septum which needed surgical interference always included not only the triangular cartilage, but the maxillary ridge. Whatever freedom of breathing is obtained by resection can always be measured by the approximation to a central perpendicular line of the point of suspension and the base line of the new partition. It never bears any relation to the amount of tissue removed, for the intervening space is later filled with a fibrous exudate that will reproduce the old conditions, unless the two plane surfaces are approximated by throwing in of the base and suspension lines. In no case observed has there been a reproduction of cartilage or bone in the new septum.

Although a large percentage of the operations were performed under local anesthesia, that method, except in selected cases, is not recommended. The element of shock is of considerable importance and can be eliminated by general anesthesia and the operative time thereby materially shortened. Although physical pain can be eliminated by the use of local anesthesia, I believe that so-called cases of cocain intoxication are largely due to fright and should be considered in our selection of operative methods. One patient, a man of middle life, lay down five times, bathed in a clammy perspiration, with a slow and feeble pulse, simply from seeing the various instruments before any cocain had been used.

None of the patients developed sepsis or any alarming symptoms. The greatest discomfort was from pressure where the retention splints were too tight. In most of the early cases packing was done on one side; in the late ones, on both. Gauze splints covered with Cargile membrane were left in place forty-eight hours. In the early cases sutures were employed and then discarded, although more cases of primary union seem to follow their use. If the anterior end of the middle turbinate was removed, only the lower half of the vestibule was packed on that side.

In the series of sixty-two cases, from which the following data are drawn, thirty-six patients were males and twenty-six were females. Nineteen patients were operated on the right and twenty-five on the left side. The records in the other cases do not state which side was involved, or were sigmoid. Eight operations were performed under general and the remainder under local anesthesia. Letters were sent to the sixty-two patients and the deductions are based on the opinion of the patients as to their present condition and not on a reexamination. The replies also include the early operations, before experience had taught valuable lessons. On the other hand, more recent cases, in which the time limit has been too short for definite conclusions to be reached, have been omitted. Of these sixty-two letters, six were returned, the addresses not having been found, and eleven patients failed to reply, leaving forty-five answers for analysis. The circular questions and the answers were as follows:

1. Is the nasal breathing free? All but two of the forty-five had free nasal breathing.

2. What trouble have you had since the operation? Thirty-nine out of forty-five had none since the operation; two had nosebleed twice, and four still have some catarrh.

3. How much have you been relieved? Forty-three stated that they were greatly or completely relieved, one only partially relieved and the other not at all.

4. What ill effects, if any, have followed the operation? Forty-three had no ill effects; one reported a great deal of nervous reaction, and one had some scabbing from an anterior perforation.

5. What effect has it had on your general health? In one case the effect was unfavorable; in five there was no effect, and thirty-nine patients were improved.

6. What effect has it had on your hearing? The hearing of one patient had entirely returned; fifteen had improved, and the rest of the patients either had no impairment of hearing or the hearing was unchanged.

It is noteworthy that, in so extensive a surgical procedure in a region functionally active, no patient complained of any undesirable sequelæ, except in the one case of perforation. Only one stated that his condition had not been improved markedly. In three cases of perforation, two patients are not aware of the condition and, therefore, did not mention it in their replies, and in the third case due to an extreme anterior deflection, the patient is free from symptoms by the use of an ointment at night. (Other perforations were made, but healed by preserving the tissue opposite.)

In the correction of the abnormal septal and associated conditions there were marked cases of asthma, headaches, aprosexia, disturbance of vision, progressive otitis media, erysipelas (from infection of erosions), chronic eczema of the lip, recurrent bronchitis, chronic nasopharyngitis, redness of the external nose, aphonia, perversion of the sense of smell and taste, and dyspepsia, as well as the mechanical obstructions and chronic catarrhs.

Though I believe that, with proper modifications, the submucous resection of the septum is adaptable to all forms of deformity and that, according to the law of physics, a hollow cylinder is just as strong as a solid one containing the same amount of material, yet there is a possibility that, in an extensive resection in a debilitated subject, from injury of the perichondrium, there might result a sloughing of the cartilage wall, with resulting deformity. For this reason and because older methods have been the result of a careful evolution and adaptation to special deformities, we should become familiar with all and individualize our cases.

The window resection, when indicated, has stood the test of time and if the principle of the hollow cylinder be carefully preserved by leaving sufficient margin superiorly and anteriorly, there is no other procedure by which the rhinologist can obtain such satisfactory results in the whole field of nasal surgery.

484 Beacon Street.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. EMERSON AND PURCELL

DR. JOHN O. ROE, Rochester, N. Y.: In the correction of deviations of the septum it must be recognized that no one operation is adapted to or suitable for the correction of all the various forms of deviation which may be found, nor even for the different conditions that may, in many cases, be found in the same septum. Every case, therefore, must be studied independently, and the operative procedure selected which is best suited to that particular patient, regardless of any predilection that the operator may have for any special or favorite method.

Before attempting a submucous resection on the septum, its feasibility must be determined by the condition of the septum itself regarding its thickness as well as the location and degree of the deviation. Then too, we must take into consideration the etiology of the deviation, whether it be idiopathic or traumatic. Of course we recognize the fact that in nearly all cases there has been a traumatic cause, either of a recent or of a remote origin occurring perhaps in childhood; but the recent cases have to be dealt with differently from those that are due to a very remote cause, in which latter cases the submucous resection is best suited. In traumatic cases of recent origin, however, in which there has been more or less crushing of the nose, submucous resection must be undertaken very cautiously on account of the lack of support of the dorsum of the nose, and the liability of the sinking in of the bridge, thereby leaving a marked depression and a marked increase in whatever external deformity there may have been. I have seen a number of cases in which a marked deformity of the nose had resulted from the injudicious employment of the submucous method.

In those cases in which the thickening is confined to a limited area or to one side of the septum, associated with a spur, a limited resection of the thickened portion only should be performed. It is as unwarrantable in these cases to take out the whole framework of the septum as it would be to resect the whole femur to correct a limited deformity that had resulted from a fracture.

In the correction of other portions of the septum not requiring resection, the operation should be supplemented by other operations not requiring the removal of the bony or cartilaginous framework, such as may be accomplished by the use of my fenestrated fracturing forceps or other well-known methods sometimes employed for the correction of deviations of the septum. In all these cases it is important so to maintain the septum in its proper position that the passages are of equal size, and especially that no contact is left at any point, for no matter how free the passage may be, contact at any point will give the patient the sensation of an obstructed nostril.

If enlarged turbinates are in the way these should be dealt with before the operation on the septum is undertaken. I do not find it necessary in these cases to employ general anesthesia as the operation can be made completely painless by the local use of cocain and adrenalin. In case of an idiosyncrasy against cocain some of the substitutes may be employed. The disturbance from the cocain, however, can usually be prevented by the previous use of digitalis and strychnin. In the case of nervous and apprehensive persons a hypodermic of morphin or other suitable hypnotic will remove the fears and render them most helpful and tractable patients.

DR. O. T. FREER, Chicago: The L flap, or open method of resecting deflections of the nasal septum, which I have gradually perfected since 1901, has nothing in common with the methods based on different principles brought out later. It was obvious to me that the promise which these other methods gave of an easy and speedy performance, with a simpler instrumentarium than mine would secure their immediate popularity and for this reason the procedures of Killian and of Hajek, advocated by Ballenger, soon became the most followed. But it was also obvious, from the insight into the complex structure of deviations of the septum given me by resections, that these methods, in which the submucous resection was described as a quick manipulation, easily accomplished through a slit at the front of the septum and with blunt or chisel-edged instrument for the elevation of the coverings, were based on superficial preconceptions of the task to be performed, rather than on a thorough understanding of its difficult nature.

An essential feature of my method is the preliminary incision creating the reversed L flap. It is this flap which uncovers to sight the entire deflection, thus leaving so small an amount of the mucous coverings on the convexity of the deviation to interfere with vision and instruments, that no obstructing long intranasal speculum is needed, a necessary instrument where the buttonhole cut is used; for this form of incision leaves all of the mucous membrane on the side of the convexity in the way, in danger of being torn by forceps and other instruments.

In spite of the great advantages offered by the L flap, they seem to be but little understood except by those who have seen my operation, most surgeons having difficulty in making this flap and hence adopting the simple incision at the front of the septum. Certain improvements in the creation of the flap make a description of the later method of its production desirable here. The flap is begun by a horizontal incision, which follows the base of the septum from behind the deflection forward into the nasal vestibule along the junction of the septum and nasal floor, that is, along the very bottom of the septum. In almost all cases this extends forward into the cutaneous covering of the anterior part of the septum. I was glad to find that Dr. Purcell had independently arrived at the same conclusion in regard to the placing of the horizontal portion of the L. This part of the incision is made with the round-edge knife D of my septum set of instruments, and should, if possible, penetrate at once the perichondrium and periosteum to the cartilage and bone. The elevation of the flap is begun from this cut as shown in accompanying illustration in the left naris with the round-bladed knife I. So soon as a little of the flap is loosened it is held up with a blunt elevator and the wound is wiped, that it may be seen whether the perichondrium be really divided or not. Usually it will be found that the mucosa alone has been severed and that a second cut is needed to reach the cartilage and bone. Then the perichondrium and periosteum are dissected up to where they may be readily lifted with a dull-edged instrument. The latter elevates the coverings backward on the septum so far as it can reach, regardless of an existing vertical angle of deflection, provided it can pass beyond it, as is usually the case. Then the keen elevator is introduced under the uplifted covering through the horizontal incision of the L as far as it can be made to go posteriorly and then made to cut through the coverings in a line at right angles to the base of the septum and from underneath, not from without, as the vertical cut of the L flap was formerly made. This method permits the elevation of so large an L flap that it includes two-thirds of the mucous coverings of the usual deviation and thus leaves the convex side of the deflection skeletonized and perfectly exposed to view without the use of a speculum. The flap is held forward by the assistant with one of the retractors which hold the nostril open in place of a speculum. An advantage of the L flap is a perfect exposure to view of the cartilage before making the first incision through it, which may thus be accurately placed at a sufficient distance behind the nasal bridge to insure its support. Hematoma cannot occur where the flap is used. I have found the submucous resection on children as satisfactory as for adults. Nine years, during which I have never refrained from operating on even very young children, have shown me that the objections to resecting deflections in childhood are purely theoretical.

DR. R. P. SCHOLZ, St. Louis: I agree that the submucous resection is applicable to all cases of septal deviation needing correction. If there be an exception, I take it to be in the correction of the septal deviation of very young children in whom the removal of cartilage might give rise to the fear of disturbing further development of the nose. I was surprised to hear Dr. Emerson say that he uses general anesthesia for this operation, for I have found the local anesthesia satisfactory. I make a simple incision along the anterior edge of the cartilage, beginning high up and extending down on to the floor of the nose. Gauze saturated with petrolatum makes a very desirable dressing, but paraffin gauze, as used by Williminski, makes the ideal tampon.

DR. BRYAN D. SHEEDY, New York: In the graduate institution with which I am connected, we average from fifteen to twenty submucous resections a week. A great many of the men present learn their submucous resection work at that institution. The operation performed is the regular one devised by Killian, the flap method as suggested by Freer occasionally being used. So far as infection is concerned,

I have seen in the last five years but two infections and practically no perforations. Our patients are operated on just as they come to the clinic without preliminary preparation. Children are operated on when they have a deflection of the cartilaginous septum sufficient to interfere with normal respiration and I have yet to see any bad results come through the submucous resection operation performed on children. Some one referred to deviation of the septum in colored people. The African skulls in the London Museum show very few deviations of the septum and I explain this condition through the fact that the colored and lower races seldom suffer from adenoids, the mouth-breathing in young children caused by adenoids being, to my mind, the principal cause for the many deviations we see.

As to deformity following the operation, many are familiar with the article I wrote four years ago, in which I gave photographs of six or seven patients, one in my own practice, who had appeared at the hospital with depression of the bridge of the nose following the resection operation. As we seldom see this deformity now, I have concluded that the sinking of the bridge was due to the removal of too much of the cartilage, the small amount of cartilage left under the bridge being weakened by inflammatory changes and therefore not sufficient to support the structures.

I usually depend on the Bernay sponge for after-packing, removing it the day following the operation, and my results have been most satisfactory. I have never used strips of gauze nor have I ever stitched the mucous membrane. I believe the stitches are an unnecessary hardship for the patients and I also believe that this operation should be done as quickly as possible, thus saving the patients unnecessary shock.

DR. W. L. BALLENGER, Chicago: We are not all expert operators, skilled as is Dr. Freer, and some of us get perforations and we are not going to quit operating because of that, but it is interesting to know how to remedy this condition if it occurs. I learned a very simple way recently from Dr. Goldsmith of Toronto. He places the cartilage removed into normal salt solution and if he happens to get opposite perforations he straightens the cartilage and reinserts it after finishing his resection between the mucous membranes and then by granulation the mucous membrane grows down over it, the cartilage becomes absorbed, being a foreign body, and a perforation is prevented. I think this is a very interesting thing to know.

In children whose septums are not yet wholly developed and who need the centers of development left undisturbed I follow the Sluder method. It is adapted to young children in whom there is extreme deviation from trauma. Sluder makes an incision above the deviation, one below, and one at the crest. Then he springs these two ribbons of cartilage together and they are held about 4 days until union takes place and the result is very good.

DR. O. TYDINGS, Chicago: I would protest against one class of operations. We all do the submucous operation and the sinking can be due only to encroaching too high up on the septal cartilage or to subsequent infection. In traumatic deformities in children, if a Gleason operation be done, and at the same time a proper splint put in, there is no reason for doing a submucous resection. It gives very beautiful and perfect results.

In packing the nose after a submucous resection I never leave the packing in more than ten or twelve hours. If I do the operation in the evening I remove the packing next morning. My packing consists of rubber tissue in which I have loosely placed cotton and I just use packing enough to keep the perichondria in contact. I have never found it necessary to use it very firmly.

DR. G. SLUDER, St. Louis: Since Dr. Ballenger has been good enough to mention the operation which I described in 1906, I should like to add a word in this connection. His description is accurate and comprehensive. There is nothing for me to add to that. I agree with his feelings concerning the development of the nose. My belief is that a rigid septum is necessary to prop the nose up during the developing years of life. I believe this because in cases in which a perforation of the septum has occurred in childhood—the simple or traumatic perforation which occurs at the lower anterior portion of the cartilage—there is uniformly a greater or less depression in the profile of the nose opposite to it. At least this is true according to my observation extending over 12 years. I believe this disturbance in the nutrition of the septum to be responsible for the depression in the profile. If this be true then all the more would be necessary the septum itself. In one patient in whom the septum was straightened by this operation, and whom I was able to follow for 10 years, the double layer of cartilage shrunk until it had the thickness of only a single layer. It then appeared as a normal septum.

DR. FRANCIS P. EMERSON, Boston: We all admired the work of Dr. Roe and Dr. Freer in plastic nasal surgery and in perfecting the operation of the window resection of the septum. I am therefore particularly fortunate in having them discuss my paper. I do not want to be misunderstood about the reproduction of cartilage. In those cases examined it had not been reproduced. In children I have been conservative, preferring other methods. In developmental cases with moderate deflection, our dental friends are helping us materially. Some of the cases reported last year by Dr. Foster of New Bedford showed remarkable results. In regard to anesthesia, you will notice in my paper that a large percentage of operations were done under cocain. I do not question but that all can be done that way. I have simply found that there are in Boston a large number of nervous women in whom the element of shock is of considerable importance and, for the comfort of the patient and my own convenience, I like general anesthesia.

DR. CLYDE E. PURCELL, Paducah, Ky.: I thank Dr. Freer for his endorsement of my incision and wish to bear him out in his statement that there are valid objections to the incisions so far offered. I am glad he stated before this body of laryngologists that we had practically reached the same conclusion working independently and I am also glad I read my paper here before he had a chance to describe this new incision or I might have been accused of stealing his thunder. I want to emphasize his position that perforations are preventable and should not occur. My experience in the cases herein reported bears him out. If the incision is placed well back in the nose and brought down on and partly across the nasal floor ample operative room is insured. It is easier in my experience to begin the elevation at the highest point of the incision on the septum, working down and not from the anterior free border. Getting down into the bottom of the acute angle seems essential, especially in the cases in which the crista is much involved. Unless there is a great deal of misplacement of the cartilage anteriorly, it is not necessary to bring the horizontally curved incision as far forward as I have represented in the drawing. I have had no personal experience with Dr. Sluder's method but it would seem that it has a very limited field of usefulness. When I get a suitable case I am going to try it. I want to commend the speaker who made a plea for more complete and thorough work in nasal surgery. It is a very easy matter to remove some cartilage but it is very difficult to remove the obstruction fully without injury to the integrity of the nose.

Now, in regard to sutures, it may be a little fad of mine, but I have had such fine results, with no retraction, that I shall continue to use them. I have also devised a little angular knife suitable for making incisions through the mucous membrane and also valuable for elevating the mucous membrane, cutting through and removing the cartilage. By using this I lessen the number of instruments employed. I think that we should not hesitate to give children the advantage of free nasal respiration. I understand that Dr. Killian operates on children and I certainly see no reason why we should not.

Diagnosis of Whooping-Cough.—During an epidemic, or with a history of exposure, whooping-cough should be diagnosticated without special difficulty, but sporadic cases may hold many symptoms common to other diseases, e. g., acute bronchitis, influenza, tuberculosis, tonsilitis and adenoids.—C. Thorington, in *Gulf States Jour. of Med. and Surg.*

SURGERY OF CYSTIC DEGENERATION OF THE KIDNEY *

T. C. WITHERSPOON, M.D.
BUTTE, MONT.

The purpose of this paper is to direct attention to the practicability of giving surgical relief from certain symptoms or ill effects of cystic kidneys. The number of patients with cystic kidney for whom any given operator may render service is necessarily small; the majority are not aware of its existence until late in the course of the degeneration, and then it is impossible to stay the process or to relieve the symptoms.

The lack of individual experience necessarily leads to an uncertain surgical attitude toward the lesion, and when, during an operation, such a condition is discovered, the operator is unprepared to do the most appropriate thing to bring about a surcease of symptoms or to check the progress of the cystic degeneration.

For the purpose of getting directly to the subject, and before discussing the nature of the lesions and its relation to surgical treatment, I will relate briefly the case of a man who came to me just one year ago for treatment:

History.—June 5, 1909, the patient, S. S., a man aged 49, of rather thick build, of a muddy complexion but otherwise in seemingly good strength, came to the hospital to obtain relief from a bloody urine which began about June 1. There was nothing in his past history which shed light on the condition. He had not suffered from gonorrhea or local injury to the genito-urinary tract, nor did he give a history of any general infection or body injury. At the time of his visit, the blood alone indicated to him that something was wrong, for otherwise he had not suffered, not even from frequency in urinating. His urine was examined and found to contain a large quantity of blood. On settling for several hours, fully one-half of its bulk was composed of a dark muddy deposit.

Physical Examination.—This revealed an enlarged left kidney which was slightly tender. On reflection the patient remembered that he had been conscious of the left side for months. This consciousness, however, was never of real pain nor even of discomfort sufficient to cause apprehension of disease. The patient was given internal medication, returning every day or two for observation. By June 10 he began to grow weaker and shorter of breath, and as the blood continued, the necessity arose for direct surgical intervention, if possible. On June 11, a cystoscopy revealed blood coming from the left kidney. On June 13, the patient came into the hospital for closer observation. He was restricted to a low diet and complete rest. During the first twenty-four hours in the hospital, he passed 42 ounces of very bloody urine; the next twenty-four hours, 34 ounces, the next only 30, but the next, 45 ounces. He was then prepared for operation, though a positive diagnosis had not been made, knowing only that the loss of blood continued and was from the left kidney.

Operation.—On June 18 a lumbar incision exposed a well-developed polycystic left kidney. The appearance was typical and needs no description. I opened the various cysts with scissors and forceps and removed their thin covering and partitions; only the bulkier, solid tissue was left. I spent about twenty minutes ridding the kidney of its cysts. I was greatly tempted to open the peritoneum and palpate the right kidney, but as the skiagram and external palpation indicated no increase in its size, I thought best not to do so. A large boiled gauze sponge was then packed snugly about the kidney and the wound closed at the upper end, leaving the lower open enough to freely drain the field of operation.

Subsequent Course.—The patient made an uneventful recovery. The urine cleared of blood entirely by June 21. The amount passed following the operation was slightly greater than that passed while in the hospital prior to the operation. July 24 the wound was practically healed and the patient was discharged in apparently good condition. In March, 1910, I made an examination of him and found his condition very satisfactory. He says that he feels perfectly well. No recognizable blood has shown in the urine since the operation. The amount passed daily is normal. A sample sent to the laboratory gave the following: Color, light straw, clear; reaction, acid; sp. gr., 1018; no albumin, bile nor sugar. Microscopic findings, a few leukocytes, an occasional hyaline cast and a few large epithelial cells. To palpation of the side on which we operated there was no evidence of reenlargement. There was also, we may note, no increase in size of the opposite kidney. He suffers no discomfort in the wound or along the genito-urinary tract. To all clinical means of ascertaining his condition, he is well.

This case fortunately presented a symptom which brought him to us early—the blood in the urine—and our effort to stop it has resulted in decided relief.

The questions naturally arise: What was actually accomplished? Will the relief be temporary or has the operation had a tendency to check the further progress of the trouble in the kidney operated on?

NATURE, ETIOLOGY AND COURSE

This brings us to a consideration of the nature of kidney cysts, their etiology and course.

R. L. Thompson in a recent review of the subject says:

> The newer literature concerning kidney cyst-formation, especially the work of Ruckert, Busse, Dunger, Herxheimer and Braunwarth have shown that all cysts of the kidney are closely related—with the exception of a small group, they are due to a congenital malformation which seems to lead to this new growth.

He records a post-mortem finding, in an infant which died of an acute infection, of a faulty union of a lobule of cortex with its corresponding pyramid. In this portion of the kidney there was evidence of commencing cyst development.

The cysts which I wish to discuss in this paper are those which are included under the congenital type, whether they are found in the infant or developed later in life; whether single or multiple, in one kidney or both. A small class, which will not be considered, consists of those found in chronic indurative nephritis, the parasitic cysts, the dermoid cysts and those due to cystic degeneration in lymph-nodes and blood-clots.

Rayer, it will be remembered, was the first to separate the polycystically degenerated kidney clinically from those just mentioned. He presented no microscopic differentiation nor did he entertain an idea of the present-day conception of the development of the kidney, but based his opinion purely on the macroscopic appearance of the cystic organ.

Koster first accentuated the necessity for a recognition of two anlagen for kidney development and of a malunion of the two for cyst formation. He, however, considered the anlagen as, on the one hand, the Wolffian duct, forming the ureter and pelvis, and on the other, a mesenchymatous cell-mass giving origin to the rest of the organ.

Hildebrand more clearly developed the theory of congenital cyst-formation, declaring, as Kupffer had demonstrated, that the pyramids and pelvis united with the cortex, and when a congenital failure of the union occurred, there was a disturbance at the location of the convoluted tubules next the pyramid with marked proliferative activity of certain cellular elements. This produced a draining back of the secretions and cyst formation.

* Read in the Section on Surgery of the American Medical Association, at the Sixty-first Annual Session, at St. Louis, June, 1910.

Ribbert later demonstrated that the obstruction played only a part, and that the cyst formation was to be accepted as a new growth.

Nauwerck, Hufschmid, Singer and others, look on the whole process as one of cystadenomatous formation—a new growth.

Wigand on the other hand, considered the cysts due to an abnormal spouting from the kidney anlage of canals which later become cystic.

The complete picture of a polycystic kidney must of necessity suggest a new growth, whether the basis of such a change lies in a congenital malunion of the cortex and pyramid, a congenital misplacement of certain cell elements, a congenital spouting of abnormal urinary tubes, an acquired epithelial proliferative process or an active connective tissue proliferation with obstruction of the urinary tubes.

Such a process may consist in the formation of one or several large cysts or may be characterized by a complete honeycombing of the kidney with a great number of cysts of all sizes, from those of microscopic dimensions to those as large as a walnut or even a hen's egg. When such a formation does occur in an individual, both kidneys are, as a rule, involved and not uncommonly the liver as well.

DIAGNOSIS

In making a diagnosis of cystic kidney, four symptoms may be considered: pain, hematuria, a recognizable growth in the side of the abdomen, and uremia. Pain, or perhaps discomfort, is not constantly present; in fact, all of the symptoms may fail until the end, when the greatly compromised kidney activity leads to the final uremia.

The presence of blood is much more common than either pain or discomfort or the discovery of a growth. In fact, it is the one symptom which most often calls for relief before the final uremic stage.

TREATMENT

The treatment of the condition is essentially surgical, for otherwise no treatment can be of any avail whatever. The first three symptoms are all amenable to surgery, at least, by this means alone can relief be offered, but for the last symptom, uremia, nothing can be done. It is true that in the uremic stage by cutting down the necessary kidney activity to the lowest possible degree through diet restriction, rest and by helping vicarious elimination, some short prolongation of life may be given, yet this is but temporary.

What surgical treatment should be resorted to in these cases? The majority of recorded operations were nephrectomies. I should like to offer this criticism of such a procedure. The removal of a kidney, especially as both are in the vast majority of instances involved in a like process, is a sacrifice too great to be permitted. The aim of any surgical procedure should be to save every grain of kidney tissue possible, while at the same time offering relief from the symptom complained of. In an organ of such vital necessity to the body as the kidney, but two conditions justify nephrectomy: first, the presence of an infectious process producing a serious general intoxication or the possibility of spreading a life-destroying infection; second, the presence of a malignant growth.

In cystic kidney neither of these conditions exist, for the final uremic state results purely from the loss of kidney tissue, rendering the condition analogous to that of the contracted kidney. Some have recommended puncture of the cysts, others injections of cyst-destroying chemicals into the various sacs.

In the case reported I believe I have accomplished a satisfactory result by excising the non-functioning cyst coverings and septa and causing a healing of the wound through granulation, with union to the surrounding tissues.

This patient was bleeding freely and losing strength rapidly, yet within three days following the operation, all trace of blood ceased and has continued checked until the present time. The urine is apparently normal and his general health most excellent. What ultimate good has been done must be determined through time. Whether such a procedure will check further cyst-formation by diverting the blood in the engorged vessels through other vascular channels and thereby relieving congestion, cannot be determined short of a very considerable experience, but at least the patient still possesses his kidney and is able to care for the greatest possible amount of kidney work under the circumstance.

Dr. Ludwig Pick of Berlin, answering an inquiry as to the possible good of the operation, replies as follows:

I hasten to answer your question concerning the case of cystic kidney. According to my opinion, there is no differentiation possible between congenital cystic kidney of the newborn and of adults. I believe that all these cystic kidneys result from a congenital cause and that they do not have their beginning in middle life, and if they become manifest in middle life, they had their existence before. Why a stronger growth should develop at this time, there can be no theory offered and only a problematic answer may be given.

I personally believe that the kidney originates from two separate anlagen: first, the ureter pelvis and collecting tubes proximally out from the ureter anlage; secondly, the cortical portion of the kidney from a special blastema. When the two anlagen do not meet exactly or normally and unite, then we have a formation for cystic kidney through an earlier or later development of an embryonic epithelium. Why in one case earlier and in another case later, is, as already said, not entirely clear. As you see, my opinion is that the kidney is developed from the two anlagen and this explains the origin of the cystic kidney through misbuilding.

Now, indeed, I believe that in your most interesting case, a final good result will not be obtained. But as the largest cysts were opened, it will last a certain time until the little ones, not yet opened by you, and not yet large enough, will make their appearance.

I have seen a case here in which a cystic kidney was removed entirely, and the other was, at the time, not apparently cystic. The patient lasted ten years until the other kidney became cystic and then the woman died.

ABSTRACT OF DISCUSSION

DR. DANIEL N. EISENDRATH, Chicago: I regret to dispel the rosy illusion under which Dr. Witherspoon is laboring with reference to the prognosis in his case, as he seems to think that his patient will recover. The consensus of opinion among pathologists and surgeons who have had occasion to see many of these cases of polycystic disease of the kidney is that in about 99.9 per cent. of the cases the condition is bilateral, and that it is only a question of time until both kidneys are so atrophied that no secreting tissue is left. Those cases present themselves practically in one of three ways. I have seen them in two of the three. In the first, the patient is brought into the hospital in uremic coma, with no previous history obtainable. At the autopsy we find that both kidneys are converted into a mass of cysts. Each kidney is three or four times as large as normal, and is a mass of cysts, with practically no kidney tissue left. So long as there is enough kidney tissue left between the cysts the patient will not have

a uremia, but as soon as there is less kidney tissue present than can take care of metabolism, uremia is inevitable.

In the second clinical picture the patient presents himself with severe, constant, almost uncontrollable hematuria. These are the patients for whom I believe that something can be done, and Dr. Witherspoon's case shows the benefit of surgical intervention. We might open a few of these cysts in the hope of establishing some collateral circulation, so as to diminish the vascularity, and I believe that it is in this way that the benefit seen in his case can be explained. But, so far as prognosis is concerned, the average experience is that within a definite period of years, owing to the progressive bilateral character of the disease, both kidneys will be involved to such an extent that a fatal termination is inevitable.

DR. C. M. NICHOLSON, St. Louis: I have had to deal with three cases of cystic kidney and all were unilateral. In each case the probable diagnosis was based on the presence of a tumor in the lumbar region, easily palpable and blood in the urine. In one of these cases there was marked pain. In the first case, the kidney being only about twice its proper size, nothing was done; in the second an incision was made, the diagnosis verified, eight or nine cysts punctured and the wound packed with gauze. The patient left the hospital apparently well four weeks later, but after nine months returned with a large lumbar abscess which was connected with the kidney. He has occasionally had abscesses form, though he declined to have an operation, further than drainage. The third case was the largest cystic kidney, with one exception, thus far reported (*Ann. Surg.*, xxxvii). It extended about twenty-two inches, occupying all the right side of the abdomen. There was not only a tumor and hematuria, but marked pain at times. A median incision was made, the diagnosis verified, the opposite kidney examined and found to be the proper size, thirty or forty cysts punctured through the loin and the entire mass removed. Dr. Ralph Thompson made an extensive study of this case and demonstrated that the mass was a cystic kidney, not of new formation, but due to dilatation of the uriniferous tubules. The patient made a perfect recovery and for the last few years has been entirely well, attending to all her duties. The treatment of these cases depends on the pathologic condition present. If all or most of the kidney substance has been destroyed, then the best interests of the patient are conserved by removing the mass.

DR. JAMES E. MOORE, Minneapolis: Inasmuch as this is a congenital condition which eventually ends with death, it seems to me that it is very rarely indeed that a nephrectomy is justifiable, because one is liable to have some kidney tissue left which is functionating. These are not surgical cases until such time as they begin to have complications that may be relieved by surgery. My experience is limited to two cases, in which I could not accomplish anything. In the first case I operated under a mistaken diagnosis, on a woman 50 years old, who was supposed to have an ovarian cyst. She was suffering from pressure symptoms and when I opened her up I was surprised to find that it was retroperitoneal, extending behind the kidney. I removed the cyst.

The second case was that of a man, between 40 and 50 years of age, who came with an obscure abdominal tumor, and was easy to diagnose congenital cyst. Both kidneys were large enough to map out the lobules. He came to me with fever and with a diagnosis of his own. He had lived in the south and said that he had had repeated abscesses of the liver. I did not question his diagnosis until I found the kidneys. His cysts were infected and he was becoming septic. He gave a history that Nature had opened some of his abscesses, and it seemed to me that I might help Nature this time, so I opened and drained three or four septic cysts. He was restored to health sufficiently so that he could attend to his business for about a year, when he developed uremia and died.

DR. T. C. WITHERSPOON, Butte, Mont.: The points I wish to bring out are these: First, we have fallen into the habit of accepting a statement as being authoritative and allowing it to become accepted generally without giving it careful scrutiny. That these cases are congenital we can, of course, agree, if by that we mean that point at which the trouble occurs is the point of union between the two anlagen where we find active cell proliferation. But that this should be looked on as a congenital condition purely because it occurs at this anatomic point I cannot agree. It usually does not occur until the fifth decade of life, scarcely under the third, except in the type of cysts found in the infant, and it evidently comes from this proliferative cell activity. I do not know what induces the overgrowth of cells. I am not willing to look on this lesion as some Presbyterians do their future state, that is, as a matter unalterably fixed by predestination. I do not believe that it is. These patients may have a chance to recover. I am going to watch my cases and see what will happen and report later.

THE NUTRITION OF THE FEEBLE INFANT

HENRY DWIGHT CHAPIN, M.D.
NEW YORK

The proper nourishment of feeble infants is a problem that taxes the resources of the most skillful pediatrist. Digestion and assimilation may be poor either by inheritance or from faulty feeding, and when, from any cause, the general vitality of the infant is lowered, the digestive tract is usually the first to suffer and the last to recover tone. Whether the infant becomes feeble from errors in diet and hygiene, from illness or from poor inheritance, improved diet and hygiene form the only successful treatment. Drugs are of little or no avail. If these patients are not relieved, sooner or later some form of atrophy or marasmus will result—a condition in which a chronic digestive weakness is the principal evidence of the depressing symptom-complex. The large general death-rate of early infancy can be checked only by the most careful attention to the diet and care of this class of feeble infants. It must be confessed that thus far our results have not been very brilliant. The object of this paper is to discuss some of the factors that enter into this problem, with the idea of suggesting the lines along which improvement may take place.

The structure and function of the digestive tract, the form and quantity of the food elements that are given, especially in relation to the assimilative power of the individual, and the most improved hygiene must all enter into such a discussion. With reference to the ingestion of food, the stomach will naturally call for the first consideration.

I. THE MOTILITY OF THE STOMACH

Our knowledge of the general capacity and function of the stomach in early life has been fairly well worked out. In normal infants, during health, no great difficulty is encountered by competent feeders in reference to the kind and quantity of the food and the intervals of its administration. In feeble and badly nourished infants, however, the weak action of the stomach, especially in its muscular power, is the source of much trouble. The weakness and atrophy of the general musculature is exemplified in a marked degree in the motility of the stomach. At best, the musculature of the stomach and intestines is not highly developed during the first months of life, and in feeble infants, in whom the general muscular tone is below par, the digestive tract suffers very markedly from this cause. This will doubtless throw some light on those cases in which during life serious digestive symptoms have been noted but after death little pathologic change has been observed as far as the mucous membranes are concerned.

With this condition in mind, a series of twenty-one cases was carefully studied with regard to gastric motility, as in the case of the feeble infant it is important to make certain that the intervals of feeding are not too frequent. The ages of the patients were as follows: Two weeks, 1; three weeks, 1; six weeks, 1; two months, 1; three months, 6; four months, 4; five months, 2; six months, 1; seven months, 1; twelve months, 3. These infants were taken from the wards of the hospital and represent all grades of malnutrition from beginning cases to those in the last stages of atrophy. We may generally classify the cases as thirteen of marked feebleness, three cases of malnutrition in a milder form and five cases just at the beginning of faulty nutrition. It was, however, impossible to form any definite conclusions as to gastric motility based on the age of the child from these cases. The older children were brought to the hospital either suffering from some grave general disease, or because they had failed to gain weight and were becoming atrophic. They thus formed poor material from which to determine normal gastric motility.

Of nineteen patients that were examined at the end of three hours, only six could be shown to have approximately empty stomachs, and these six, with one exception, were holding their own and in no case could free hydrochloric acid be determined. In thirteen out of the nineteen cases, it was absolutely demonstrated that there was a considerable residual amount of food still remaining in the stomach. In all these cases there was a positive Fehling test, and curds and whey, either singly or together, were present. It is interesting to note that butyric acid fermentation was marked in six of the cases, and in two of the cases in which the stomach was apparently empty there was a faint trace of butyric acid. In five of the seven patients examined at the end of three and one-half or four hours, the stomachs were surely empty. Of the remaining two cases, one showed many curds at the end of four and one-half hours, while the other showed only a few small curds. These last two patients were losing weight rapidly and the butyric acid fermentation was marked.

In only two of the seventeen patients examined at the end of two or two and one-half hours, were the stomachs empty. In the other fifteen cases, a positive Fehling test was obtained with one exception, and in four there was a positive Gram test. In thirteen of these cases butyric acid fermentation could easily be demonstrated. Large tough curds, or many small curds with whey were present in all of these cases. In considering the above figures, it should be remembered that few, if any, of the children examined were entirely normal, and that deductions from these results have a value only as a study in the nourishment of the feeble child.

There can be little doubt that, in a large majority of cases, the feeble infant with digestive disturbances has been fed at too frequent intervals. Too often a second feeding is given before the previous meal has passed through the pylorus, with the result that each successive feeding has been contaminated. The process of butyric acid fermentation has thereby been set up and kept in operation until, at last, a condition analogous to that of myasthenia gastrica is present. In none of these cases could any great disturbance in acid secretions be made out. The condition of the enzymes was not carefully investigated, but, as it is a well-known fact that the enzymes are not affected until long after the acid secretions have become greatly diminished or disappeared, it may be taken for granted that the enzymes were present in a normal state. While free hydrochloric acid could be demonstrated in only six cases, combined hydrochloric acid was invariably present in fairly large quantities. The average amount was about 30, the lowest being 12, and the highest 48. In nearly every case in which the stomach was not empty, fluid was present, and in a few cases the dilatation was marked. This state of affairs serves to emphasize the fact that in feeble infants gastric motility is greatly decreased, and that whatever may be the case in the normal healthy child, in these atrophic infants it is often necessary to increase the interval between the feedings.

According to Tobler and Bogen and Heubner, milk passes through the pylorus in the case of breast-fed infants in about two hours, and in those taking cow's milk in about three hours. Tobler has further shown as a result of experiments carried on in animals with variously colored milks that each subsequent feeding forms a sort of layer about the earlier one, and thus the food first ingested may be kept in the stomach indefinitely if the feedings are given at too frequent intervals. Granting the truth of these observations, it can be seen at once that it is of the utmost importance to have the meals properly spaced, as otherwise there remains a residuum of food in the stomach which contaminates each successive addition of food. This constantly recurring contamination and overburdening of the stomach results in fermentation, and in time gastric dilatation with a loss in tone of the muscular coats of the stomach may ensue. This explains how a chronic digestive disturbance may lead to the condition known as atrophy.

It is interesting to trace the analogy between this state in the infant and the condition known as myasthenia gastrica in the adult. Myasthenia gastrica is characterized by a loss of tone in the muscular coats of the stomach as a result of which there is a moderate dilatation. Its diagnosis depends on the finding of fluid in the stomach at the end of two hours or more, with a normal gastric secretion. Among the causes bringing about this condition may be mentioned the general debility following any disease and the habitual ingestion of excessive amounts of food. An important element in its treatment is to make certain that the stomach is never overloaded. In atrophic infants these conditions are reproduced and while it cannot be claimed that they are exactly parallel there is a good deal of similarity. Thus in atrophic infants a practically normal gastric secretion may be found with a marked loss of motility if our previous schedule of three-hour feedings be accepted as approximately correct. With few exceptions food and fluid remain in the stomach of these infants well over two hours—in most cases three hours or more—and as a consequence of this stagnation butyric acid fermentation begins and is passed along from one feeding to the next. Hence it should be expected, as in the myasthenia gastrica of the adult, that there should be a marked improvement in many of the symptoms if care is taken to make certain that the stomach is entirely empty for a short period before a future feeding. It is not only desirable that any fermenting material lying in the stomach be passed forward into the intestines to avoid contamination of an incoming meal, but there should also be an interval during which the stomach contents shall be strongly acid so that the growth of harmful bacteria may be inhibited.

II. THE FORM AND QUANTITY OF THE FOOD ELEMENTS

When percentage feeding was first developed, it was assumed that protein, fat, carbohydrates and mineral matter were well-defined entities, and the basis of teach-

ing was that scientific feeding consisted in merely changing the quantities of these ingredients in the food mixtures. Within the past few years an entirely different viewpoint has been taken, principally as the result of an increase in general knowledge of the subject of nutrition. "Protein," "fat," "carbohydrates" and "mineral matter" are now recognized as being generic terms and just about as definite as the terms "wood" or "stone." There may be few who realize that at least twelve different forms of protein, five different forms of carbohydrates and two different forms of fats are used successfully in infant-feeding and the digestive properties of these food elements are modified by the combinations in which they are offered.

To be most successful as a feeder one must be familiar with the uses and fields of these different forms of the food elements and must also realize that there is no fixed and absolute rule to follow in combining them. There are many feeble infants who seem to thrive when the food contains a high percentage of carbohydrates, while others do better if the carbohydrates are kept low and the quantity of protein is raised. Occasionally raising the fats will improve nutrition and this may appear to be what the infant needs and can digest; but most feeble infants seem to have difficulty when the fats are too high. Milk mixtures containing much cream pass more slowly through the pylorus than those low in their percentage of fat and higher in protein and carbohydrates, according to Tobler and Bogen. Many will remember that only a few years ago high fat in the food was looked on by many as the thing to be especially desired, but now low fats seem to have the field. There can be no universal rule with reference to the fats, however, any more than to any other of the food elements.

From the standpoint of nutrition infants need liberal quantities of protein for tissue formation, and enough fats and carbohydrates to supply heat and energy value or calories. But in the management of feeble infants the question of what is theoretically correct must be subordinated to what will practically work, or, in other words, what the infant will take and assimilate.

In some instances a very small quantity of protein, perhaps 0.5 per cent., is all that the young infant can take when the protein is in the form of the natural casein of milk. If the form of the casein is changed by the action of an acid, as in buttermilk feeding, in which the casein is precipitated in a finely divided state, as much as 1 or 2 per cent. of the casein may be digested easily. Lime-water, sodium bicarbonate, sodium citrate and other chemical additions for modifying the casein have been used with milk and all produce good results in some cases. No one method has succeeded in all instances, and it is not likely that any will ever be discovered that will be universally applicable, for the reason that infants are not all alike and conditions are not always the same. If oat gruel, or soy-bean gruel, with its very high protein content, is employed, several times as much protein may often be utilized as if the unmodified protein of cow's milk is used. These facts point out plainly that changing the form of the protein has frequently a very important place in the management of infants.

The changing of the form of the carbohydrates also frequently shows a marked effect in the progress of the infant. The carbohydrates used in infant-feeding are starch, dextrin, maltose, cane-sugar and milk-sugar, and it is often surprising what marked improvement will follow a change in the carbohydrates employed.

It has generally been thought that infants cannot take more than 7 per cent. of carbohydrates, but in Keller's malt soup, which has been advocated for atrophic infants, the carbohydrates, composed of starch, dextrin, maltose and milk-sugar amount to about 13 per cent., or almost double the accepted maximum quantity. The percentage of fat in the malt soup is about 1 per cent. and that of protein about 1.7 per cent. and each ounce yields about 22 calories or almost exactly the same as one ounce of good breast-milk. In many instances Keller's malt soup has given good results while in many others it has signally failed, like every other mixture. Its use proves only one thing; there are some patients who seem to thrive especially well when the fats are low and the carbohydrates high and consisting of a mixture of several forms.

I have long advocated the use of dextrinized gruels for this reason and for the practical results in many cases of difficult digestion. As usually employed, the carbohydrates exist in these gruels in the forms of soluble starch, dextrin and maltose in varying proportions, according to the degree to which the digestive change has been carried. Some atrophic patients, however, do better when the product is largely maltose. This can be attained by allowing an active diastase to remain in the gruel for a longer time at a comparatively low temperature.

The general method to be employed in feeding in difficult cases will have to be determined, to a certain extent, by experiment with the individual infant. If this fact is once firmly fixed in mind, much progress will have been made, as time spent in looking for a universally applicable food will then be used in learning how to make up mixtures of equal nutritive value in which the various food elements may be high or low in quantity and in a great variety of forms. Where the physician now has one or two formulas to draw on he may thus have many, and as he learns to use them he will find that the difference between success and failure often lies more in changing the form and even the flavor of the food than in a profound knowledge of calculating theoretically indicated mixtures. This is particularly the case in dealing with the difficult digestive problem of feeble infants.

III. FINKELSTEIN'S METHOD OF FEEDING

An interesting and somewhat unique contribution as to the cause and relief of nutritive disturbances in infancy has recently been made by Finkelstein, of the Berlin Kinderasyl. Instead of the fat or protein being the usual cause of trouble, most digestive disturbance is referred by him to the sugar of milk. He confirms[1] an earlier report of clinical observations at the Berlin Kinderasyl in reference to the pathogenesis of severe nutritional disturbances in the nursling. He there found that the ingredient in the food especially harmful to the sick infant was the sugar, and that in certain cases even the natural milk-sugar of cow's milk might cause the severest symptoms. He was thus led to hope that a method of nourishment based on a decrease in the milk-sugar would lead to cures that would be impossible with the ordinary methods. The report of improvement following this kind of diet has proved the correctness of the hypothesis and Finkelstein is convinced that a step in advance in the treatment of the nutritional disturbances of poorly nourished infants has been made. Not only may the lighter forms of nutri-

1. Finkelstein: Monatschr. f. Kinderh., April, 1909.

tional disorders be quickly and certainly improved, but patients can be cured that our previous experience has shown could be saved only by breast-milk. The earlier view of the harmfulness of casein is not confirmed and the opinion is advanced that casein in the intestinal canal is directly beneficial, as the intensity of the pathological sugar fermentation, with the ensuing dyspeptic symptoms, is lessened by increasing the amount of casein. A lowering of the sugar increases the tolerance of the intestines for fats and hence will allow an increase in the amount of fats which in the former mixtures, rich in milk sugar, only work harm. The principles of the new method of nourishment are summarized as follows: (1) the cutting down of the amount of milk-sugar and of the salts; (2) in place of this, casein is added and a not inconsiderable amount of fat; (3) a further bettering of the condition is sought by substituting other forms of carbohydrates for the milk sugar, which tends to an increased tolerance.

The food is prepared by separating the casein and fat from one liter of milk. The curds are pushed through a sieve to break them up and then added to half a liter of water. Half a liter of buttermilk without sugar is then added to the mixture. One liter of this food contains the whey and sugar from half a liter of milk, the casein from one and a half liters and the fat from one liter. A small amount of fat and casein are lost in its preparation, but the following are estimated as the percentage ingredients: protein, 4.5 per cent.; fats, 2 to 3.5 per cent.; sugars, 1.5 per cent.; salts, 0.3 per cent.

This method of feeding was tried at the Babies' Wards of the New York Post-Graduate Hospital in a series of twenty cases. The infants, with a few exceptions, were not doing well on the ordinary food when they were changed to the new method. They were all hospital patients and presented the usual difficulties of infants previously badly fed and cared for, and finally sent to an institution for treatment. When the change was made the infants were fed every four hours, day and night, and the food was usually given in lesser bulk than in the previous feedings. Water was given freely between the feedings. The stools generally became gray and homogeneous with a putty-like consistency and dry appearance. There was usually then a tendency to constipation. The results are given in the tabulation above.

A study of this table will show that the results in this series of cases were not very promising. Before starting the new feeding the ordinary percentage method, with and without gruel diluents, had been employed with poor results. At the beginning of the new feeding the infants, as to their nutritional condition, may be classified as follows: in good condition, 6; in fair condition, but a little below normal, 3; beginning atrophy, 4; with atrophy, 3; with marked atrophy, 4. Twelve patients died; eight of these began as atrophic infants and four started in good condition when the diet was instituted. Three patients, which began as atrophic infants, increased in weight, and five increased somewhat in weight who began in good condition. Altogether, eight patients gained slightly in weight and twelve lost in weight on the Finkelstein feeding.

It seems to me that when benefits follow this method of feeding, the results are due more to the form in which the protein is given, the casein being in a very finely divided state, than to the lessened amount of sugar in the mixture. The food appears in some cases to check the rapidity of atrophy temporarily and hence may have a restricted usefulness. Judging from the character of the stools it may also act well in certain forms of diarrhea.

TABULATION OF RESULTS FROM FINKELSTEIN'S FEEDINGS

		—Ordinary Feedings—			—Finkelstein's Feedings—				—Final Condition—		
Case.	Age, Weeks.	Days.	Gain, Oz.	Loss, Oz.	Days.	Gain, Oz.	Loss, Oz.	Condition at the Start of Finkelstein's Feeding.		Gain, Oz.	Loss, Oz.
1	3	..	Stationary		17	8	....	Good.	Improved.	8	..
2	3	..	..	....	21	5	....	Good.	Improved.	5	..
3	4	8	..	2	29	..	7	Fair.	Death.	..	9
4	6	30	..	12	6	..	7	Marked atrophy.	Death.	..	17
5	6	10	..	7	6	1	....	Beginning atrophy.	Death.	..	6
6	8	9	..	10½	32	15	....	Beginning atrophy.	Improved.	5	..
7	8	32	..	10	27	5	....	Fair.	Death.	..	5
8	8	15	..	10	36	..	23	Good.	Death.	..	28
9	13	6	..	4	14	15	....	Fair.	Improved.	7	..
10	13	..	..	....	22	..	1	Good.	Stationary.	..	1
11	13	37	..	25	27	19	....	Atrophic.	Improved.	7	..
12	13	..	..	....	22	..	30	Beginning atrophy.	Death.	..	30
13	13	23	..	17	3	..	3	Atrophic.	Death.	..	20
14	13	13	..	19½	2	..	4½	Marked atrophy.	Death.	..	24
15	13	16	..	16½	6	..	6	Moderate atrophy.	Death.	..	22½
16	13	6	..	10	7	..	10	Atrophic.	Death.	..	20
17	13	15	..	3	11	..	18	Good.	Death.	..	20
18	17	27	..	19	51	..	8	Atrophic.	Death.	..	27
19	21	3	4	....	31	2	....	Good.	Improved.	5	..
20	26	13	..	7½	6	..	4	Marked atrophy.	Death.	..	11½

IV. HYGIENIC MANAGEMENT

The hygienic surroundings have a most important effect on the nutrition of the feeble infant. If the environment is faulty the best care and feeding will usually prove ineffectual. These patients require an altered environment that will furnish plenty of fresh air, good general hygiene and individual care. For this reason they never do well in institutions, no matter how carefully and scientifically they are there fed. They cannot assimilate the best of food without plenty of good air to assist in its oxidation; oxygen is as necessary a food for them as protein or fat. It is only individual housing and care with constant oversight that can accomplish good results. Even an ignorant but kindly woman in a home can often get better results than a trained nurse in a hospital with a series of cases to look after and a stated routine to enforce. This is especially true in charitable work, where relief of feeble infants can be much better accomplished along the lines of family life with individual supervision instead of the collective life with institutional methods.

Acting on this idea, the Speedwell Society was started at Morristown, N. J., in 1902, and I have ever since boarded out my atrophic infants there under the supervision of a doctor and trained nurse, who watch and treat the cases under the care of the various foster-mothers. The results have been better than with any other method of treating this class of cases. Thus, among 121 infants under 3 months, 45 died; 95, from 3 to 6 months, had 29 deaths; 83, from 6 to 12 months, had 21 deaths, and 85 infants, from 1 to 2 years, had only 8 deaths. These infants were all poorly nourished

at the start, from bad hygienic surroundings, with various degrees of digestive disturbance from faulty feeding on the bottle, and stationary or losing weight. Although all had to be kept on bottle-feeding, a good proportion were not only saved but were restored to fair and even vigorous vitality. Under the old institutional methods nearly all would have died.

I would express my thanks to Dr. Pease and Dr. Leopold of my staff, to the former for undertaking the work on the motility of the stomach, and the latter for applying the technic in the Finkelstein trials.

51 West Fifty-First Street.

THE PROGNOSIS IN CONGENITAL DISLOCATIONS OF THE HIP *

EDWARD H. OCHSNER, B.S., M.D.

Attending Surgeon Augustana Hospital; Adjunct Professor of Clinical Surgery in the Medical Department of the University of Illinois

CHICAGO

The subject of congenital dislocations of the hip has in recent years been so thoroughly covered in orthopedic text-books and monographs that most of its phases can be looked on as definitely settled. There are, however, a few problems that still remain open and require further observation and discussion. There is still considerable difference of opinion as to the ultimate prognosis in congenital dislocations of the hip, and, as is usual in such cases, only carefully compiled statistics can definitely settle the question. It is with the hope of aiding a little in the solution of this phase of the problem that I have decided to consider it and to add a report of the cases which I have myself treated, and to discuss briefly some of the factors which seem to me to have been most potent in producing the large percentage of complete or partial failures reported in the literature.

For the sake of clearness I wish to classify these cases under three headings: first, those cases in which no serious effort has been made to reduce the dislocation; second, those cases which have come to the surgeon too late for a successful bloodless reduction (while there is no hard and fast age limit, I think it is safe to say that after the sixth year in double and after the eighth year in single dislocations an attempt at bloodless reduction becomes more and more difficult and dangerous with less and less likelihood of successful accomplishment); third, cases of patients who come in time for the bloodless operation, in general before the age of 6 in double and 8 in single dislocations.

If untreated, or ineffectually treated by braces, Buck's extension, etc., the prognosis is always quite bad. At the very best there exists an unsightly deformity which persists through life and often becomes more pronounced as the patient grows older. Added to this we have a displeasing gait, which is either a limp or a waddling duck-like movement. These two factors alone are serious enough afflictions, especially for girls, who are the most frequent sufferers, but this is by no means all. The power of endurance is nearly always somewhat, often greatly reduced. Usually the older the patient grows the more the endurance suffers. Besides, there is no way of telling at the age of 3, for instance, which child will get along fairly well and which one will be a great sufferer in later years. Some children manage to get along comfortably until the age of puberty or until they have some severe infectious disease or other great physical or mental strain, after which they seem never again to regain sufficient endurance to be able to carry this extra handicap.

Lorenz quotes Halsted as stating that 31 per cent. of all adult patients suffer pain, especially when fatigued. It may vary from slight discomfort to such a degree of severity as to incapacitate the patient from all work that requires walking or standing, and in extreme cases walking may become impossible.

Bradford reports five cases in women in his own practice who suffered severe pain when they exerted themselves to the equivalent of walking a mile at a stretch.

One of my own patients, a girl of 17, suffered great discomfort, even though her work was no more strenuous than is required of a general practitioner's office attendant. One patient, an unmarried woman, aged 35, whose pain simulated coxitis and who had been treated for coxitis for a considerable length of time, was found on careful examination to suffer from congenital dislocation of the left hip. Finally, one of the most serious consequences of untreated congenital dislocation of the hip is the resultant pelvic deformity, which in women may be the cause of dystocia.

By some the belief is still held that in a certain percentage of cases a spontaneous cure may take place, and that a new joint may be formed. This opinion is based on the fact that in traumatic dislocations this sometimes takes place. Those who take this position seem to forget, however, that a traumatic dislocation and a congenital dislocation are very different. In the former the head slips out of the capsule and can occasionally actually make for itself a pocket simulating a joint, while in the latter case the head remains within the capsule and cannot do this.

The old methods, such as supports to the dislocated hip by means of pelvic bands, corsets and braces of almost every conceivable description, are of course only palliative and have so far as known never secured a permanent reduction. That Paci secured some cures by his method is definitely proved, but nowhere, not even in his last article, have I been able to find any statement as to what percentage of cures he can effect by his method.

I believe we all agree that the operation of choice is the functional weight-bearing method, or so-called bloodless method of Lorenz. As stated above, after the age of 6 in double and 8 in single dislocations, successful reduction by this method becomes possible in a smaller and smaller percentage of cases the older the patient grows.

Thus, for instance, in my own cases, in three single and four double hip dislocations, or seven hip cases in all, I failed to secure satisfactory reduction every time. I secured anterior transposition with fair functional result once. When we add to this number a considerable number of cases of older patients, whom I have examined at various times at my office and elsewhere, but of whom I have kept no record, in whom the displacement was so marked and the muscles so shortened that an attempt at bloodless reduction was clearly out of the question, it becomes evident that the percentage of successful reductions in patients past the age limit is very small.

Unfortunately I am unable to find authentic figures in the literature which convey a clear idea as to the results obtained by other surgeons in cases of patients who have

* Read in the Section on Surgery of the American Medical Association, at the Sixty-first Annual Session, at St. Louis, June, 1910.

passed this arbitrarily established age limit, first, because most men do not recognize this limit in their statistics, or record only those cases in which a reduction has been attempted; and again, because others report only those cases in which they believe they have accomplished either a reduction or a transposition.

The bloodless operation is clearly not very promising where patients have passed this age limit, and, while reduction can be accomplished by the Hoffa-Lorenz open operation in practically every case, it has very serious objections, among which may be mentioned a considerable mortality, prolonged illness, a necessity for still longer after-treatment and a functional result which usually is very unsatisfactory.

Thus Hoffa in the fourth edition of his "Orthopedic Surgery" reports 250 cases treated by the open method. He secured reduction in every case, but had a mortality of six. Anatomically the results were good in all of his cases, no reluxation having taken place, but none of his cases were functionally perfect and a large percentage of them resulted in complete ankylosis. At the present time I believe that we are safe in saying that an attempt at reduction by open operation is never justifiable in double dislocation of the hip.

The late Prof. Julius Wolf of Berlin once expressed himself very tersely in regard to the Hoffa-Lorenz open operation in double dislocation of the hip. "Before the operation," he said, "the children walk like ducks and after the operation they walk like lame ducks."

In single dislocations the condition is somewhat different, however. If a patient has great trouble with a single dislocated hip and reduction cannot be secured by the bloodless method one is often justified in resorting to the open operation, because in this condition, even if ankylosis of one hip in good position results, the patient's endurance becomes greatly improved. Thus, for instance, I had two patients, each with double dislocations; in each I was able to reduce one hip by the bloodless method, but, failing to reduce the second hip by this method, I subsequently accomplished reduction by the open method. In one of these hips I secured an excellent anatomic result with very good motion and in the other a fair anatomic result with a fair degree of motion.

As stated above, statistics on this subject vary greatly, because different standards are adopted. Hoffa told me personally, shortly before his death, that he had treated over 600 patients by the functional weight-bearing method of Lorenz; that in single dislocations in patients between the ages of 2 and 8 he had satisfactory anatomic and functional results in 70 per cent. of his cases; that in double dislocations in patients between the ages of 2 and 6 he had, however, only 20 per cent. of permanent functional and anatomic results; that among those patients who came under treatment later in life the percentage of successful cases became rapidly less as the patients became older. It will be observed that this latter statement corresponds fully with my own experience.

Lorenz,[1] in the last report which I was able to obtain, gives the following statistics: In 364 cases of unilateral dislocation, 218 gave anatomically good results, 127 subspinal position, 19 showed lateral apposition. Of 158 bilateral dislocations, 70 showed good anatomic results, 19 showed subspinal position on both sides, 7 lateral apposition on both sides, 49 good results on one side, the other side subspinal, 4 cases one side anatomic replacement, the other side lateral apposition. Taking all hips together, gives 680, with 358, or 53 per cent. of good results. Or in single dislocations, out of 364, 218, or 60 per cent. anatomically and functionally good results, and in the bilateral form of 158 cases, 70, or 44 per cent. gave anatomically and functionally good results. Of course, to these should be added the cases in which he accomplished lateral apposition or subspinal position. Unless the case is definitely reported, however, there is no way of telling whether such transpositions have actually benefited the patients.

Hoffa states definitely that some of his cases were worse after the transposition than before. This low percentage of satisfactory results may be accounted for in a measure by the fact that Lorenz gives his age limit as 9 to 10 years in unilateral and 7 to 8 years in bilateral dislocations. He gives it as his opinion that the third year is the most favorable.

TABLE SHOWING RESULTS OF TREATMENT OF HIP-JOINT DISLOCATIONS

Total Patients:	
Examined	37
Rejected	3
Declined treatment	3
Treated	31
Above Age Limit:	
Treated	5
With single dislocation, treated	3
With single dislocation, secured anterior transposition	1
With single dislocation, secured functional improvement	1
With single dislocation, failed in securing reduction. Condition unchanged	2
Double dislocation. Treated	4
Double dislocation failed in securing reduction. Condition unchanged	4
Total Patients Below Age Limit:	
Treated	26
With single dislocation. Treated	17
With single dislocation, secured reduction	17
With single dislocation, secured good anatomical result	16
With single dislocation secured good functional result	16
With single dislocation, secured good anatomic and functional result	16
Still in cast. Hip in position when last examined	1
With double dislocation. Total number of hips treated	18
With double dislocation, secured reduction by bloodless method in	14
With double dislocation, secured good anatomic result after bloodless reduction	9
With double dislocation, secured good functional result after bloodless reduction	9
With double dislocation, still in cast. Hips in position when last examined	4
With double dislocation, failed in securing reduction. Condition unchanged	2
Secured reduction by open operation	2
Secured good anatomic result with fair degree of motion. Following open operation	1
Secured fair anatomic result with fair degree of motion. Following open operation	1
Secured reduction position perfect when cast was removed 18 months after reduction. On examining 6 months later, reluxated. Reduced again. Has reluxated again	1

In this country Lorenz was evidently less successful. Thus Ridlon,[2] in 29 hips subsequently examined by him, gave it as his opinion that he found the following results: 2 perfect replacements, 1 apparent replacement, 6 supracondyloid displacements, 13 anterior transpositions and 7 complete failures, or perfect results in only one-tenth of the cases.

Blencke[3] gives in 60 per cent. of all cases good functional results.

My own statistics are the following: I have treated 26 patients below the age limit. Of this number 17 had single dislocations. Reduction was secured in all of these. Sixteen have been out of their casts for a year or more and all of these have good, permanent anatomic and functional results, making 100 per cent. of permanent cures in cases with single dislocations of the hip below the age of 8 years. Nine cases, or 18 hips, with

1. Lorenz: Am. Jour. Orthop. Surg., 1904-5.

2. Ridlon, J.: The Ultimate Results of the Bloodless Replacements of Congenitally Dislocated Hips, THE JOURNAL A. M. A., April 16 and 23, 1904, pp. 1011, 1063.

3. Blencke: Ztschr. Orthop., Chir., xv, Nos. 2-4.

double dislocations in patients below the age of 6 were treated. Reduction was secured in 14 hips by the bloodless method. Ten of these hips have been out of the cast a year or more. Nine of the 10 have good functional, anatomic results. One reluxated after the cast was removed. I failed to secure reduction by the bloodless method four times; one patient both hips, two patients one hip each. The latter two were reduced by the open operation and good anatomic and functional results in one case and fair results in the other were secured. In other words, in 14 double hip dislocations below the age of 6, who have been discharged from treatment, good anatomic and functional results were secured in 10, or 71 per cent. The four still in casts were in good position when last examined. They have not, however, been counted in the percentage. The complete table will appear in the published paper.

While the number treated is relatively small, I believe I have had a sufficient number of them, and the time that has elapsed since their treatment was completed is long enough to justify some conclusions. The two assertions that can be made without fear of contradiction are fortunately the two that are of the greatest importance to the patient as well as to the general practitioner. They are, first, that no case should go undiagnosed beyond the age of 3; second, that if properly treated at this age the great majority of dislocations can be successfully reduced and can be given good anatomic and functional results. By a good anatomic and functional result I mean that the head should be permanently opposite the Y cartilage, that the patient should have normal endurance and that his gait should be so nearly perfect that the ordinary observer cannot even detect a peculiarity in the patient's walk.

I wish now briefly to call attention to a few errors that are commonly made in this work. They are extremely costly errors, as they are, I believe, the cause for the great number of serious traumatisms, reluxations and anterior transpositions. It will be observed that in my statistics I have only one anterior transposition, and that in a girl 11 years of age. These errors can be avoided by observing the following directions:

1. Too great force should never be applied, especially not suddenly. In children below the age limit it is rarely necessary, and in children above the age limit there is very considerable danger of doing more harm than good. It is, however, possible that my failures in securing successful reductions in children above the age limit may be attributed to my unwillingness to use excessive force.

2. The reduction should be accomplished by bringing the head over the posterior rim of the acetabulum rather than bringing it around the lower border. This latter method is apt to be adopted if bringing it over the posterior rim proves to be difficult. I am sure it is one of the principal causes for the great number of anterior transpositions and also for the considerable number of failures in the hands of some operators. I believe that many of these hips have been considered reduced, when, as a matter of fact, the capsule has just been pushed in front of the head, resulting in a transposition without a reduction. If this takes place it is quite impossible for a new joint to be formed, because a portion of the capsule intervenes between the head and the acetabulum, preventing the development of the cotyloid ligament. These pseudoreductions are very deceiving, because the operator experiences the peculiar shock of the head slipping anteriorly, and because a fulness appears in the groin and the thigh becomes lengthened, as shown by the tenseness of the hamstring muscles.

3. When reduction is once accomplished, the hip should never be intentionally reluxated. This is an error that is very commonly made by even the most experienced operators. I believe that it increases the difficulty of retaining the head very greatly, because it gives the hip reluxation habit. Any farmer would know better than to drive a cow over a fence twelve times, in order to teach her to stay in the pasture.

4. The hamstring tendons should not be stretched at the time of reduction. Their action is fully as important in holding the head opposite the Y cartilage as is the subsequent weight bearing. Besides, the tenseness of the hamstring muscles is a very valuable sign for the first couple of weeks, as it is almost positive proof that the hip has not reluxated. Besides this overstretching of the hamstring muscles is entirely unnecessary, and being an additional trauma, is dangerous and harmful. If these little patients are encouraged to use their limbs as soon as possible, they will always get their legs straight long before the casts are removed and there will be much less likelihood of injuring the vessels and nerves.

5. The cast should be applied over stockinette instead of glazed cotton. If the bony prominences are protected by a little felt or quilted gauze this will be much more comfortable than cotton padding. If stockinette is used the head can be held so firmly that it will not move even a quarter of an inch. It can thus be kept opposite the Y cartilage until the capsule has had time to shrink and until the cotyloid ligament has had time to develop. In my last twenty-five cases I have used this material and in not a single case did reluxation take place while the hip was thus encased.

6. The cast should be applied with the thighs abducted to a right angle and flexed to a right angle, and it should be left in place for a year from the time of reduction with only one change of cast. In recent years some of the best operators have been in the habit of removing the cast in a relatively short time. Thus Hoffa has advised immobilizing the joint from fourteen to sixteen weeks. I believe this accounts in a large measure for his small percentage of permanent cures in double dislocations of the hip. In a large percentage of cases this period is not sufficiently long to permit proper shrinkage of the capsule and proper development of the cotyloid cartilage. I believe that the development of the cotyloid cartilage is the most important factor in the permanency of the reduction.

I am confident that if these directions are followed the percentage of cures will be much greater in the future than it has been in the past.

2106 Sedgwick Street.

ABSTRACT OF DISCUSSION

DR. A. J. GILLETTE, St. Paul, Minn.: I think that the term functional result does not convey to one who has not treated these patients and followed them up the real benefit which is obtained. A functional result is one in which the patient is pretty well satisfied, but the doctor is not. In other words, the limbs are very useful, but anatomically they are not perfect. So that when you take into consideration the perfect results Dr. Ochsner has and then the functional result, he has done exceedingly well.

With regard to the amount of force to be used, I notice that he did not believe that we should resort to very severe manipulation. I am getting bolder and I am getting a little more enthusiastic each time, and I am sure I have put into place some hips lately which I would not have operated on a few years ago. Of course, it is possible to produce a fracture. It has occurred in the hands of very good men, and there may occur paralysis. Even if paralysis occurs after manipulation, it is only traumatic and will soon clear up. At least, it has done so in my cases. I think that we should attempt to reduce these hips, and, if necessary, use a great deal of force.

I think we should perform the bloody operation on more patients than we do. There are so many reasons why we do not get the hip into position that I will not enumerate them now. If you can get the head of the bone into position, and there is a twist in the neck of the femur, reduce the dislocation and perform a subtrochanteric osteotomy to bring the thigh in a good position later. Supposing it is necessary to do a bloody operation, do so. If the result should happen to be an ankylosed hip, that is not so bad, if you have

the head in position. It is wonderful how much better these cases are than those which are not reduced. The patients can walk and get about better, look better and feel better. They are free from pain or discomfort of any kind, simply because there develops a tremendous amount of compensatory motion in the sacro-iliac joint.

Dr. Ochsner says that he does not believe in stretching the hamstring muscles, and he gets good anatomic results, yet practical experience tells me something else. Frequently when I get the head of the bone in the socket and then attempt to stretch the hamstring muscles, the head slips out. Therefore I do not see any reason why we should not stretch these muscles. I know I have made the mistake of using too much padding. Another thing about which I am pretty positive is that we are leaving these casts on too long. We all know that we immobilize a joint which is not diseased for a long time, say six or eight months, the muscles and ligaments about the joint become lax and loose and one can sometimes partially dislocate a knee without the use of an anesthetic after too long use of plaster of Paris. Nearly all the heads of the bones slip out after casts have been removed, and that reminds me that many times we see these cases complicated by rickets. I had one patient come to me, and I know that there was not a dislocation present. But as the patient had rickets, I treated that condition and after six months the people came to me with the child limping, and the limp was due to a dislocation which was not present at the first visits. I wondered whether in all these cases the dislocation might be due to an intrauterine rickets. Of course, rickets is due to malnutrition, intrauterine as well as extrauterine, and therefore the after-treatment should include proper feeding. In several instances I had to treat the rickets before attempting reduction. Most of these cases of congenital dislocation of the hip present some evidences of rickets.

DR. J. P. LORD, Omaha: My experience in the treatment of congenital misplacements includes about thirty cases, and the time is commensurate with that of the history of this treatment, that is, since 1890. The treatment I employed has been all of the varieties that have been recommended. In several of my earlier cases, I think about six, I used the open treatment. My experience was that of others, and in the ten years following earlier experience, that method was abandoned. Then my methods were practically those used by Lorenz, with about the results that others reported who have used that method. For the last two years I have been using the method as recommended by Bradford, of Boston. He uses a mechanical device for applying direct force in effecting a reduction of the head of the bone, forcing it down into the acetabulum. I think this method preferable, because it does not produce the amount of traumatism that these more or less blind manipulative methods that are used for stretching the parts in every direction are liable to cause. Having reduced the head of the bone by this method, Dr. Bradford makes a strong point of applying the dressing with the limb not only in abduction, but also in inward rotation, so that the head rests more securely in the acetabulum. Bradford's results have been very much better than hitherto, often as high as 91 per cent. of good functional results. My results also have been confirmatory of Dr. Bradford's experience. This method in addition limits the time of the period of confinement; three months seem ample. I am so thoroughly convinced of the value of this particular procedure of Bradford's that little else seems to be desirable, except in those unusual cases in which there is little to be accomplished by a bloodless procedure and an operation must be performed.

DR. EDWARD H. OCHSNER, Chicago: We must always diagnose congenital dislocation of the hip by the *x*-ray. There is no reason why a diagnosis should not be made in all of these cases, and no patient should be allowed to go beyond the age of three or four without an effort having been made to effect reduction. If a proper effort is made at the proper time, we may be confident of getting much better results than the statistics of the past have led us to believe can be obtained. I believe that we can expect and have a right to expect 90 per cent. of cures in the single dislocations, and 70 per cent. of cures in the double dislocations.

RADIO-ACTIVITY INDUCED BY THE X-RAY

A PRELIMINARY REPORT *

HELIODOR SCHILLER, M.D.
AND
PATRICK S. O'DONNELL, M.D.
CHICAGO

Physicists know that certain metals used in experimental work become radio-active while under the direct influence of the *x*-rays. It has been asserted, however, that such activity ceases with the removal of such influence or shortly thereafter. The fact that emanations proceed from radium or radium-salts, by which substances exposed to them become radio-active, is well known.

The physical similarity between the rays emitted by the *x*-ray tube and the Becquerel rays, at least the similarity between the *x*-rays and the beta rays emitted from radium, their penetrating power, their phosphorescent action, their action on photographic plates in black paper and plate-holders, their action in causing air to become conductive for electricity—all these phenomena made the existence also of a similarity between the nature of these rays seem plausible to us, and therefore we began experiments by which we found that radio-activity could not only be induced in metals or other substances while under the influence of the *x*-rays, but could, like that from radium, be retained by these substances for a certain length of time, the induced activity gradually disappearing just as the induced radio-activity by radium and actinium disappears. We think we are able to demonstrate that we can store up *x*-rays or a part of them and make use of them after they have been long removed from the tube from which they were derived.

PHOTOGRAPHIC EXPERIMENTS

For our experiments we used uniformly 14½ amperes and 110 volts in the primary, 25 milliamperes in the secondary coil, a distance of 30 cm. from the substance to the tube and fifteen minutes' exposure. The tubes used were hard tubes and kept as nearly as possible of the same vacuum.

EXPERIMENT 1.—The following liquids were used: Liquid A, glycerin dilutions. Liquid B, quinin solutions. Liquid C, quinin and glycerin solutions. Liquid D, a suspension of platinum cyanid of barium in Liquid C.

These four substances were exposed in open Petri dishes to the direct influence of the rays and then put in a non-conductive material. After this they were exposed to highly sensitive trichromatic photographic plates in black paper, and as an object for the purpose we used safety razor blades. After three hours' exposure to the plate and one minute development in a normal developer, we found A negative; plate not affected; B gave clear definition of the razor blades; C and D gave very clear definition.

EXPERIMENT 2.—The same substances were again immediately exposed for twelve hours to photographic plates, which were developed for one minute, resulting in very good definition in all cases.

EXPERIMENT 3.—A portion of C and D were diluted in the proportion of 15 to 85, then exposed for fifteen minutes to the rays and for twelve hours to the plates. C gave very good definition; D had no effect on the plate.

* These experiments have been conducted in the *x*-ray laboratory of the Michael Reese Hospital and materials for the physiologic tests and experiments have been furnished by the kindness of the institution.

EXPERIMENT 4.—C and D were exposed to the *x*-rays and after exposure diluted, 15 to 85, then for twelve hours exposed to the plates. Both plates were unaffected.

EXPERIMENT 5.—A, B, C and D were, forty-eight hours after exposure to the *x*-rays, again exposed to the photographic plate and found negative.

EXPERIMENT 6.—Eight other substances were exposed to the *x*-rays under similar conditions, but all were found negative in respect to their photographic action.

EXPERIMENT 7.—B and C were exposed for thirty minutes to the *x*-rays, and twenty-four hours after removal from the influence of the *x*-rays were still found to possess positive action on the photographic plates; that is to say, the razor plates still had good visible definition.

A, B, C and D were examined concerning their action on the platinum cyanid of barium screen, and at least C and D had, after long observation, a phosphorescent action.

EXPERIMENT 8.—After exposure to *x*-rays, 20 minims of C were injected into a guinea-pig. The pig was then exposed for twelve hours to a photographic plate; the trunk and skeleton parts of the feet were to be seen in a good outline on the plate and the plate as a whole was affected. The pig was found dead and already rigid. This experiment proves the penetrating power of the induced rays.

CONCLUSIONS

1. By exposing certain substances to the direct rays we are able to induce in these substances:

   A. Rays which have a decided action on the photographic plate held in black paper and plate-holder.

   B. Rays which have a penetrating power.

   C. Rays which have a fluorescent action on the barium-platino cyanid screen.

2. These properties remain in these substances at least twenty-four to thirty hours and gradually disappear.

3. These properties have greater strength in B, C and D than in A.

4. These properties are present in a degree when these substances undergo dilution before their exposure to the *x*-rays.

5. These properties disappear at once if the substance is diluted after exposure to the rays.

ANIMAL EXPERIMENTS

Of equally great interest, revealing still other unknown peculiarities of *x*-rays, were our animal experiments made with the substances after they were exposed to the *x*-rays, or, as we prefer to say, after we made them active. It has been long known to one of us that *x*-rays are able to increase the toxicity of certain drugs and alter their physiologic action. A report of this phenomenon will appear in a later contribution; this knowledge helped us to understand the results of our experiments.

The injections were made in the mid-region of the back subcutaneously.

We injected 20 minims of substance A into a guinea-pig prior to its exposure to the *x*-rays; 20 minims into a second pig immediately after direct exposure of the substance to the *x*-rays; 20 minims into a third animal forty-eight hours after exposure of the substance to the *x*-rays or after the substance had lost its activity. This was controlled by the photographic plate. We found that the control Pig 1 remained healthy and began to feed five hours after injection.

Guinea-pig 2 was found to be hypersensitive to touch immediately after injection. A few hours afterward it acted as if sick and refused food and dragged the rear legs; the dragging finally approached a degree of paralysis. After four days the condition gradually improved, the paralysis disappeared and the animal got well.

Guinea-pig 3 died the fourth day. We experienced similar results after injecting other guinea-pigs with 10 minims of B and C before exposure to the *x*-rays, 10 drops after exposure and again 10 drops of the substance which had lost its activity. The control animals remained well whereas the animals injected with the active substances became temporarily sick and paralyzed in the legs, while the animals injected with the substances which had lost their activity died between the third and fourth day.

Pathologic or histologic examination of the place of injection has not yet been made. We have left a great many examinations for the future, but we felt justified in reporting our findings even in this premature stage.

In estimating the value of our findings, importance must be attached to the fact that those rays induced by us may prove of value in combating disease in conditions in which radium or radium emanations have hitherto been of service.

The comparative ease with which we are able to activate great quantities of substances which are at once easy to obtain and cheap, whose activity we shall be able to regulate and graduate in accordance with the length of exposure to *x*-rays and by their known susceptibility, and which we shall be able to use internally by mouth, in baths, in the form of compresses, or possibly hypodermically—all these possibilities give rise to the hope that we may enlarge our armamentarium against sickness, not overlooking the value of the discovery in the chemical field.

We have found that many other chemical substances have a tendency to become radio-active for a few minutes, others hold the radio-activity for considerable time, although this activity is scarcely perceptible with the most sensitive plates.

42 Madison Street.

BITES FROM COPPERHEAD SNAKES

GILMAN R. DAVIS, M.D., PRICE HILL, W. VA.

In response to the suggestion of Dr. Prentiss Willson,[1] that physicians should report cases of poisoning by copperhead snakes, I will report three cases. The mountains of West Virginia are full of copperhead snakes, and bites by them are frequent, many of which are treated by domestic remedies without calling a physician. The fact that patients generally recover indicates that the wounds are not serious.

To be efficacious, the prophylactic treatment of a snake bite must be immediate. The first thing to do is to grasp the limb on the proximal side, close to the wound and substitute constriction by a handkerchief or cord for the pressure of the fingers as soon as possible. Rapid and shallow stabs with a sharp-pointed penknife should then be made in and about the wound and strong suction applied by the mouth. This method involves the risk of sepsis, not only from the knife, but also from the mouth, which is never aseptic. But it is well to follow the maxim "in a choice between two evils take the less." Free bleeding may be expected to wash the poison from the wound. Snake poison taken into the stomach, even in considerable quantity, is destroyed by the gastric juice, and the amount injected into the tissue by the snake bite is about what would adhere to the point of a needle.

If I can reach the patient very soon after the infliction of the injury, I inject a solution of permanganate of potassium hypodermically in and about the wound. This quickly destroys the virus by its rapid oxidizing action. I avoid the use of whisky, but give full doses of strychnin and aromatic spirits of ammonia.

During the last two summers, I have personally treated three cases of copperhead snake bites. Two were in boys of 3 and 12 years respectively, and one in a girl of 10 years. The boys were bitten on the instep and the girl on the side of the bare ankle by snakes which proved to be of the copperhead species. In the older boy, there was swelling of the foot and leg extending to the knee. In the younger boy and in the girl, the entire leg was swollen to the body. In no case was there any constitutional disturbance. The pulse and temperature were approximately normal. Recovery was rapid, the boys being able to run about as usual in from 3 to 5 days. The girl was in bed for 4 days and on crutches for 10 days.

1. THE JOURNAL A. M. A., Aug. 27, 1910, p. 770.

Special Articles

SYMPOSIUM ON THE TREATMENT OF ACUTE ANTERIOR POLIOMYELITIS

1. TREATMENT OF THE ACUTE STAGE

H. M. McCLANAHAN, A.M., M.D.
OMAHA

The recent literature of this disease has shed much valuable light on its nature, pathology, and clinical manifestations. The treatment of the acute stage has received scant consideration. If we can do nothing to modify the disease, certainly we can do something for the patient, and until specific treatment is discovered it is the duty of the physician to institute proper treatment to meet the indications in the average case. It is now recognized that this disease is caused by some living poison developed without the body. Evidence is rapidly accumulating that it is not only infectious, but to some degree contagious. Like other infectious diseases—for example, scarlet fever—it varies widely in its clinical manifestations. Some cases are so light during the acute stage that the parents give it no serious thought until paralysis develops. Others are so severe as to simulate cerebrospinal meningitis, or terminate in early fatality by involvement of centers in the medulla. In sporadic cases the nature of the malady is frequently not recognized until the manifestation of paralysis. During an epidemic the nature of the disease may at least be suspected. I firmly believe that if its nature is recognized with the beginning of symptoms, treatment is of value, and I base this statement on the evidence of physicians in this state who have had large experience.

I shall first discuss the subject of treatment in general and then the treatment of certain varieties.

TREATMENT IN GENERAL

Isolation of the patient can do no harm to the individual and may protect others in the family. To my mind it is more important than rigid quarantine. The advice of the family physician is usually accepted, hence if he advises the mother to at once isolate the patient he has adopted the best measure to prevent the extension of the disease to others. If a mistake in diagnosis is made no harm can possibly result. If during local epidemics of this disease, such as prevailed in 1909 in Nebraska and during 1910 in Iowa, physicians everywhere would adopt this course many cases might be saved from exposure.

The physician should realize that he is dealing with a general infection involving all organs, as well as the nervous system, and apply the same general principle of treatment as in other infectious diseases; hence the important principle of treatment is elimination. This includes thorough depurative action on the bowels, the ingestion of a liberal amount of fluid to promote excretion from the kidneys, the use of remedies to stimulate diaphoresis, a liquid nourishing diet and proper temperature and ventilation of the room.

How are we to meet these indications? In the Nebraska epidemic constipation was the rule, diarrhea the rare exception. Strictly speaking this was obstipation, and undoubtedly due to the disturbance of the motor function of the bowels. Men of large experience, as Anderson of Stromsburg, Shidler of York, Shaw of Osceola, and many others with whom I have had correspondence, found this a very difficult symptom to overcome, especially in those cases where vomiting was a symptom. The best remedy is calomel in broken doses, given at frequent intervals, combined with soda. This should be followed by castor oil. It is a clinical fact worth remembering that when a child is vomiting, frequently it will retain castor oil. Even should it vomit, it will not expel all of the remedy. I clearly recall a case in which the child vomited the first two doses of castor oil and retained two subsequent doses.

Enemas are useful and often necessary, but the success of an enema depends in a large measure on the cooperation of the patient. First, an enema of 4 ounces of warm olive oil should be given, and the child encouraged to retain this for an hour or more, then an enema of one quart of soapy water should be given. This is best made by putting one-quarter of a cake of good soap in a pitcher, pouring over it a quart of boiling water and stirring until the water is cooled to body temperature. If this fails it may be followed by an enema of epsom salts, 2 ounces; glycerin, 2 ounces, and warm water sufficient to make 1 pint. After the bowels have been freely moved, they should be kept moving at least twice a day during the acute stage. If the child refuses to drink enough liquid to keep up free elimination from the kidneys, then warm salines by the bowels should be given. To stimulate the skin nothing equals a hot pack. This is also of benefit in the polyneuritic type. Dr. LeGrand Kerr of Brooklyn recommends this as a routine treatment. If properly applied this is agreeable to the child, and it is always important to have the child's voluntary cooperation. A soft, white blanket, lightly wrung out of hot water (if there is evidence of stupor, it should be wrung out of mustard water), is wrapped snugly about the child. A dry blanket should be wrapped over this—not a muslin sheet which absorbs water. The child should be encouraged to drink while in the pack. I have found that some children will drink freely of grape-juice when they will not take water. When removed from the pack they should be gently rubbed dry and placed between blankets until perspiration has ceased.

The diet during the acute stage includes milk, plain, diluted or modified; buttermilk, broths, and, if there is much gas, some of the modified cereals, sometimes a poached egg, toast when properly made and fruit juices. Toast to be easily digested should be made from bread well dried, slices cut thin and heated through.

The fever seldom requires special attention, and when it does, sponging or a cool enema most safely meets the indication. Coal-tar derivatives should be avoided entirely.

As a routine treatment, I wish to recommend the use of hexamethylenamin (urotropin). This was suggested by Dr. Dana in an article appearing in THE JOURNAL about two years ago, based on the fact that Cushing of Baltimore had determined that this remedy when administered could be detected in the cerebrospinal fluid. I know of no objection to its use. It is generally well tolerated by the stomach. I have used it in a few cases and recommended it in a number. Dr. Adams of Florence, Nebraska, has employed this in twelve consecutive cases without mortality. I personally saw some of these patients. The rule was to give two grains every two hours during the acute stage, or, more definitely, during the first two or three days.

TREATMENT OF CERTAIN TYPES

Certain types of the disease require special consideration; first, the cerebral type. By this I mean cases beginning in a stormy way with fever, delirium or stupor,

muscular rigidity, etc. It usually happens that these symptoms subside in two or three days, and if the physician has called it cerebrospinal meningitis he begins to doubt his diagnosis. Lumbar puncture is now recognized as the only positive method of early diagnosis, but I wish to speak of it here as a therapeutic measure. Dr. Adams has had four of these cases and in every one there was relief of symptoms following the puncture. I saw two of them and can verify his statement. In these cases, also, the ice-cap is undoubtedly of benefit.

The polyneuritic type certainly requires special attention. Therapeutic nihilism will not do; the patient must be relieved. I have known of instances in which the screams of the child could be heard across the street. The pain is usually most intense in the back and legs. There is usually cutaneous hyperesthesia, so that even the weight of the bed-clothes gives pain and the walking of the attendant in the room hurts the child. A limited number will require the hypodermic use of morphin, but this is recommended only in the severe cases. Relief can often be attained by the use of a suppository. The one that has served my purpose best is as follows: Powdered opium gr. ½, extract of belladonna gr. 1/8, sodium salicylate gr. 5, oil of theobroma enough for one suppository. One suppository is to be inserted every three hours until relief is attained. Here again the hot pack, as above described, will sometimes give relief. When the stomach will retain it, sodium salicylate is of benefit. In some cases the pain continues beyond the acute stage. In one little girl the severe pain in the back persisted for about three weeks. Dr. Shidler of York has reported two cases in which lumbar puncture gave notable relief.

MANAGEMENT OF COMPLICATIONS

The mortality in this disease is chiefly from the involvement on the medulla, leading to respiratory failure. I think it is well to remember that this complication will occur in any type of the disease; hence such symptoms as shortness of breath, pallor of the skin with slight cyanosis of the lips, unwillingness to talk and an anxious countenance, should warn the attendant of approaching danger. In the presence of these symptoms what can be done? I have personally seen two cases that terminated fatally in spite of every effort. In all these cases the physician should be on the alert. It has occurred to me that oxygen might be of benefit, although I have no personal experience in its use in these cases. If I should again see a case of this type, however, I would do a lumbar puncture, on the theory that the bulbar paralysis might be due to pressure and that the withdrawal of fluid would tend to relieve this pressure. One case was reported to me, in which the child was taken out of doors on a cot with benefit. There is no evidence that strychnin, nitroglycerin or digitalis are of benefit.

468 Brandeis Building.

---

2. TREATMENT FROM THE NEUROLOGIST'S VIEWPOINT

B. SACHS, M.D.
NEW YORK

The study of recent epidemics of infantile spinal paralysis, particularly of the New York epidemic of 1907, has led to a modification of the prevailing conception of the disease. Its infectious origin has been known for the past fifteen years or more[1] but not until recently have we realized that the infectious process may involve (in some instances) the greater part of the central nervous system from the cortex of the brain to the lumbar ganglia. In the majority of cases we may still consider it an anterior poliomyelitis; in other instances it will be more correct to speak of it as an infectious meningo-encephalomyelitis.[2]

Our views as to the treatment of the disease have also undergone a radical change. It will not do for the physician to sit by idly and state that there is "little to be done"—as was the fashion not so many years ago. The disease calls for patient and intelligent treatment with a certain prospect of reward. After the subsidence of the acute stage[3] the practitioner is face to face with the problem of what to do for the paralyzed limbs or muscles. Although this paralysis is due to an affection of the spinal cord, it is well not to attempt treatment of this organ. So far as we are at all able to influence the spinal lesion itself, the enforced rest in bed, and, in the earlier stages, the application of an ice-bag, will help as much or as little as any other measure. It is at least certain that these simple measures will do no harm. Counter-irritation is both painful and unnecessary, and the avoidance of pain in the case of a disease that is of itself painful and distressing is a point that we ought not to overlook. Counter-irritation over the spine is contraindicated because it will interfere with the quiet rest of the patient on the back; because of the danger of the formation of bedsores; and, lastly, because it is more than doubtful whether it can do any good. Galvanization of the spine in the hands of a careful practitioner may do no harm. It is more than doubtful whether it can do any good, and no one as yet has shown that if a current be applied to the skin over the spine any of it actually reaches the spinal cord substance itself. All therapeutic efforts should be concentrated on the treatment of the paralyzed groups of muscles, and in order to treat these with some show of intelligence it is above all necessary to determine which muscles or groups of muscles are especially involved. The entire aim of treatment is mildly to stimulate the nerves and to exercise in one way or another muscles which cannot be exercised by the will. This can be done by electricity, by massage, and by active and passive exercises.

ELECTRIC TREATMENT

First, as to the proper form of electric treatment: It is the rule in paralysis due to poliomyelitis that the nerves and muscles exhibit some form of the reaction of degeneration. This implies that in all but the mildest cases the nerves and muscles will not respond to the faradic current but will contract on galvanic stimulation. Muscular exercise is the chief aim in treatment, and for that reason one must follow the simple rule that in treating the paralyzed muscles that form of current is to be used which gives the best contraction with currents of moderate strength.. Thus, if it is found that the contraction with the negative pole (KCC) is obtained with weaker currents than is the contraction with the positive pole (ACC), then the attempt should be made to exercise the muscles by the use of the negative pole, the other pole being placed at some distance from the paralyzed group of muscles. Currents of moderate strength should be employed, and the making

1. Sachs: Nervous Diseases of Children, ed. 1, 1895.

2. The Report of the Collective Investigation Committee on the New York Epidemic of 1907, Jour. Nerv. and Ment. Dis., Monograph Series VI. I recommend a careful study of the entire report to all physicians interested in the subject. The final section on treament is full of helpful suggestions. The German translation of the report has just been published.

3. Let me hope that my colleague in this symposium has recommended that during this stage the treatment be similar to that employed at the onset of other acute infectious diseases.

and breaking of the current should be done slowly, so as to give the muscle time for deliberate contraction. Moreover, it is well in the majority of instances to apply the stimulating pole over the belly of the muscle unless it has been previously determined that the muscles can be excited from a motor nerve point. Do not merely pass the pole up and down the limb, but determine exactly how the muscles can be properly moved and apply the pole to those points. It is needless to say that this cannot be properly done unless the person doing it has had some satisfactory training in the use of electric instruments. If at all possible, the physician or his assistant should give this treatment, particularly in the earlier stages of poliomyelitis, and it should not be left in the hands of a trained nurse unless that person is specially qualified to give that treatment. In almost every case of poliomyelitis some groups of muscles are more completely paralyzed than others; some of them can be excited from the motor nerve point, others cannot. Whenever an entire group of muscles can be moved by applying the current over a motor-nerve point—the peroneal, for instance—advantage should be taken of this for the simple reason that a number of muscles can be exercised at one and the same time. Whether the paralysis has involved the muscles of the upper or the lower extremities, or of the abdomen or of the back, the same rules as to electric treatment obtain in all cases. The faradic current, except as a mild nerve stimulant, is of little benefit, particularly in the graver cases in which both nerves and muscles give no faradic response. It may be suggested, however, that an examination for diagnostic purposes with the faradic current be made from time to time, and as soon as the muscles and nerves in the process of recovery begin to respond to the faradic current, this current may be used conjointly with the galvanic.

In those rarer instances in which the lesion is so slight that the faradic response of nerves and muscles has never been entirely lost, the faradic and galvanic currents may be employed at alternate sittings. The matter of electric treatment can hardly be overdone. It should be begun about one week after the subsidence of the febrile period and should be continued daily until full recovery has set in or a chronic stage has been reached, during which exercising of the muscles no longer results in further improvement.

MASSAGE

The paralyzed limbs of a poliomyelitic patient exhibit a distinct tendency to wasting and to an impairment of the peripheral circulation. These conditions can be improved, if not overcome, by proper massage. A thorough kneading of the muscles will help to improve the circulation in the peripheral parts and at the same time will serve to counteract the tendency to contracture which is developed at an early period of the disease in many instances. A deep massage of the parts is in order, but the person giving the treatment should be cautioned not to add insult to injury by bearing down too heavily on the nerves in exposed areas. Thus the ulnar and musculospiral nerves, the sciatic, the peroneal and the posterior tibial, should not be manipulated with too much force. In the earlier stages of poliomyelitis these nerves are apt to be sensitive and I have known much harm to be done by violent massage. I would urge that every practitioner arrange to witness the massage as given by the person intrusted with it, and to caution against any excessive measures. Many a case of sciatic and peroneal neuritis might have been avoided if this precaution had been taken.

PASSIVE AND ACTIVE EXERCISE

I wish to lay especial stress on the importance of passive and active exercises. In the earlier paralytic stage passive exercises are of the greatest importance because in this way, and perhaps in this way only, can a tolerable nutrition of the paralyzed muscles be maintained. Moreover, early contractures can be partially counteracted. This tendency to contractures is in many instances the most serious feature of the disease and is responsible for subsequent deformities. In the investigation committee's report[2] Dr. Jelliffe has specially urged the value of hot baths (100 F.), and of giving the first passive exercises when the patient is lying in the tub. I fully subscribe to this suggestion and would insist that the nurse or attendant in charge of the patient be asked to carry the child carefully into the bath, and to have the passive exercises given in the tub.

Directly the paralysis has begun to recede, the time has come for active exercises. While the paralysis comes on with great suddenness, the improvement in the use of the muscles as a rule sets in very slowly and deliberately. There is no task more important for the physician in charge of poliomyelitis cases than to recognize the return of power to one or the other muscles or groups of muscles at the earliest possible moment, to fasten on this return, and to encourage from small beginnings the further development of muscular power. In the case of paralysis of the upper extremities, finger exercises, the grasping movements of the hands, raising of the shoulders, raising of the arms, etc., should be encouraged, and definite periods of the day should be set aside for such movements.[3] If the deep spinal and abdominal muscles are involved the patient should be encouraged to rise from the recumbent posture. At first only one or two attempts of this sort should be made; as the child grows stronger the same movements may be repeated four, five and six times up to the point of fatigue. In the case of the lower extremities, the movement of the toes, the bending of the knee, the raising of the entire leg, may be practiced while the child is still confined to its bed or couch, and as the improvement continues it should be encouraged, first with assistance, and held firmly under the arms, to stand on its feet, to make a few careful steps, and as power returns to the limbs to walk from its bed to a couch, to a chair, finally across the room; but it should not be allowed to walk unsupported until the physician has satisfied himself that the legs will actually carry the body.[4] The tact and good judgment of a physician will be displayed in determining when it is safe to allow such a patient to use its limb or limbs unsupported. Children beyond the age of five, and older persons, may be encouraged to use crutches in getting about. Smaller children may be placed in go-carts, and other devices may be resorted to, in order that weakened muscles may be exerted without detriment to the patient; but unless the muscles are wholly inadequate to the performance of their duties they should not be entirely replaced by mechanical devices.[5] It goes without saying that active exercises can be employed only in those cases in which some groups of muscles have retained considerable power, and I feel satisfied that we shall see a much smaller number of deformed and helplessly paralyzed limbs if these active exercises are properly prescribed in the earlier periods of the disease.

4. No physician would be in danger of following the example of an Eddyite practitioner who insisted that a child with a poliomyelitic leg be put in the middle of the room and be made to stand, with the result of its falling in a heap and fracturing its thigh.

5. It is most important to guard against the development of pes equinus and of genu recurvatum.

ORTHOPEDIC MEASURES

If permanently paralyzed or deformed limbs are the result of an attack of poliomyelitis, orthopedic measures should be freely resorted to. Simple contractures may, no doubt, be overcome by tenotomies, possibly by suitable apparatus, but I would particularly urge that the transplantation of tendons and the shortening of tendons be practiced in those cases in which an improved position of one or both legs could be brought about by such procedures. To a neurologist, the problem of transplantation of tendons is a very simple one. It merely amounts to implanting the tendon of an under-acting muscle into the tendon of an over-acting opponent. Much time is wasted, as a rule, in hoping for a return of tolerably normal conditions. If six months or a year after the onset of poliomyelitis a group of muscles shows considerable wasting, an absolute reaction of degeneration and no return of muscular power, it is useless to hope for spontaneous improvement. The orthopedist should then step in and attempt to correct the mischief done by the disease.

MEDICINAL TREATMENT

No reference has been made to medicinal treatment, for the simple reason that I know of no drug which has the slightest effect on the spinal lesion or on the paralyzed muscles after the acute stage has been passed. While salicylates and mild narcotics will have to be employed in the earlier period of the disease, and even iodids and ergot may be administered in the earlier stages, there is no sufficient reason to administer these drugs in the paralytic and post-paralytic periods. For the relief of neuritic and muscular pains, give a combination of pyramidon, citrate of caffein and aspirin, or aspirin alone, varying the quantities according to the age of the patient. If necessary, codein may be added. I am very certain that injections of strychnin or of arsenic are absolutely useless, though there can be no objection to the use of the ordinary blood and nerve tonics, provided the practitioner keep in mind that he is attempting to improve the general condition of the patient and is not endeavoring directly to effect a change either in the spinal cord lesion or in the paralyzed nerves and muscles.

CONCLUSION

In conclusion, let me insist that intelligent gymnastic exercise of the paralyzed or weakened limbs is the method to which one should pin one's faith, and from personal experience I can state that the physician who directs these exercises intelligently, and who will direct them patiently, will have no reason to regret the time devoted to this good cause. In recent epidemics the disease has been of such varying intensity that we have no right to claim that any case is a hopeless one, and much can be done by properly directed therapeutic efforts.

135 Central Park West.

---

3. The Orthopedic Treatment

JOHN RIDLON, M.D.
CHICAGO

The treatment of anterior poliomyelitis consists of massage, movements, braces and surgery. Massage is used to maintain and restore, at least to some extent, the nutrition of the paralyzed muscles. Electricity is employed for the same purpose, but is in my opinion of very doubtful value.

MOVEMENTS

Passive movements of the joints of the paralyzed part are made by the operator to maintain the normal range of motion and thereby prevent contraction of the unopposed or weakly opposed muscles, and to stretch already contracted muscles and correct recent and mild deformities. Assisted movements are made use of where some strength remains in the paralyzed muscles, but too little for the patient unassisted to put the joint through its full range of motion. Active movements performed by the patient himself have positive curative value, probably greater than any other remedy. Resisted movements are normal active movements of the patient resisted by the operator just sufficiently to bring out the full strength of the patient as he performs each movement.

BRACES AND SPLINTS

Such mechanical appliances as splints and braces are used to prevent the development of contraction deformities, and to enable the patient to use the paralyzed limb more and more normally than in many cases it is possible for him to do without this aid.

SURGERY AND MASSAGE

Surgery is used to correct deformities, to maintain that correction and to assist in the restoration of function and in some cases to eliminate the necessity of braces.

Gentle massage and gentle passive movements may be employed from the time that the diagnosis is made. More vigorous massage and movements should be employed as soon as the sensitiveness of the limbs has passed off, and should be continued daily for years. When it is possible to have a skilled masseur, one should be employed. When it is not possible to have the service of a skilled masseur for a long time, some member of the family should receive from some competent operator at least a few lessons.

Osteopathic treatment, as such, is useless; for osteopathic treatment is to massage what homeopathy once was to regular medicine, a pretense to a reality. Real massage is a real aid. Osteopathy in the treatment of infantile paralysis is a pretense; it is useless, and the employment of the osteopath means the loss of much valuable time.

CONTRACTION DEFORMITIES

In nearly all cases of anterior poliomyelitis contraction deformities develop sooner or later. In most cases, fortunately, it is later, some months after the acute attack with its usual accompaniment of sensitiveness and soreness of the limbs has passed, and when it is comparatively easy with splints or braces to prevent it. But in a few cases contraction deformities, even of severe degree, develop during the first eight or ten days, while the sensitiveness is still so great that it seems a positive cruelty to move the child at all. But if the attending physician allows contraction deformities to develop, whether it be early or late, he should realize fully the responsibility he is taking, and should stand ready to admit that to his neglect of a simple precaution the child must have all the rest of his life more useless limbs than he needed to have. For no orthopedic or surgical treatment can ever make these contracted muscles as good as they might have been had he prevented the development of deformity.

Obviously, then, the first thing to do in the orthopedic treatment of a case of anterior poliomyelitis is to prevent contraction deformity by daily passive movements, if they are sufficient; if they are not sufficient, to put the limb in a plaster cast, or some equally efficient splint,

with all joints in the normal position for standing erect; and to maintain them so until all tendency to contraction deformity has passed, or an efficient brace can be applied.

DETAILS OF BRACES

No practitioner should prescribe a brace unless he can make it himself and modify it from time to time as may be necessary. To require an instrument-maker to measure for, make, fit and apply a brace is equivalent to asking a druggist to put up a bottle of medicine for the treatment of a patient suffering from the diagnosis of pneumonia. If the physician in charge of the case can not measure and make the drawings for the brace he wants, so that any competent mechanic can construct the brace, and then fit and modify the brace without the assistance of the mechanic, he is not competent to carry on the brace treatment and should not attempt to do it.

Here and there an orthopedist can be found sufficiently competent to correct some slight contraction deformities by braces constructed to stretch the shortened muscles, but of these there are few, for in these days most young orthopedists seem to have a greater ambition to perfect themselves in surgery than in mechanics.

As a rule braces should be used only to prevent the development of deformities at joints where the tendency is not great, in joints where the deformity has been fully corrected, and to enable the patient to use the limb more and better than he can use it without the brace.

CONTRAINDICATIONS TO BRACES

If there is no deformity and no tendency to deformity and the patient can use the limb without a brace, then a brace should never be used. A brace should be a help, not a burden. It is greatly to be regretted that the cupidity of some physicians leads them to order braces from surgical instrument makers who give a commission of 25 per cent. on the cost of the brace, for this usually means a costly brace that the physician can neither measure for, fit to the patient nor use intelligently.

INDICATIONS FOR SURGERY

Surgery in the treatment of anterior poliomyelitis may be either "bloodless surgery," that is, the correction of the deformities by great force, stretching and tearing all shortened soft parts that produce joint deformity, the patient of course being fully anesthetized, or operative (bloody) surgery. There is a certain risk, not often appreciated, in the use of great force in the correction of paralytic deformities. For both from nonuse and from deficient nutrition arising from the paralysis, the bones grow thin and friable and may be broken before the deformity can be overcome.

These bones when broken sometimes are the source of fat emboli, not infrequently the cause of death. But when a deformity can be safely corrected without a cutting operation it should be so corrected. Then it should be put up in a well-padded and heavy plaster splint and kept in the splint and used for from four to eight months. After that an efficient brace should be worn for years.

When a paralytic deformity cannot be corrected by force alone, it can generally be fully corrected by simple tenotomies and force. When this is done the after treatment should be as before indicated, namely, a well-padded and heavy plaster splint, worn for months while the limb is being used, followed by a brace, for years in most cases, massage and movements. I have seen no better results than this uniformly gives.

TENDON SURGERY

During the past fifteen or twenty years a great many patients with infantile paralysis have been operated on by various and changing methods of tendon-splicing, tendon transplantation, and tendon lengthening. The present view of this work is that the tendon-splicing of fifteen years ago is useless; that the tendon-transplantation of ten years ago is useful in a small and carefully selected lot of cases; that the tendon-lengthening and joint-fixation with permanently buried silk ligatures as practiced during the past five years holds out as yet a promise of better results when well done in carefully selected cases. Yet hardly a week passes that we do not see utter failures as results of operations done by others. As yet it is too soon to say what the ultimate results will be after ten or fifteen years have passed in the cases that now seem to be entirely satisfactory.

Treatment of these patients by nerve grafting is useless.

The resection of flail joints in complete paralysis in order to obtain ankylosis and escape the burden and cost of braces for life is sometimes a success, and sometimes a failure through failure of bone union, probably owing to the impaired nutrition.

PROGNOSIS

Finally, let me say that occasionally a patient with anterior poliomyelitis recovers without paralysis; occasionally a patient but slightly paralyzed recovers from the paralysis; most patients gain from six to eighteen months after the acute attack has passed, and never gain after that in real strength, but may gain in ability to use the limb through orthopedic treatment. In at least a third of the cases there is arrest of the growth of the length of the limb during the whole of the growing period of the child. It has been asserted by Heather Bigg of London that in some cases which have shown a progressive difference in growth of the limbs for several years the paralyzed and shorter limb in a measure overtakes the well limb by a more rapid growth, but this I have not seen, nor has it been mentioned by other writers.

72 Madison Street.

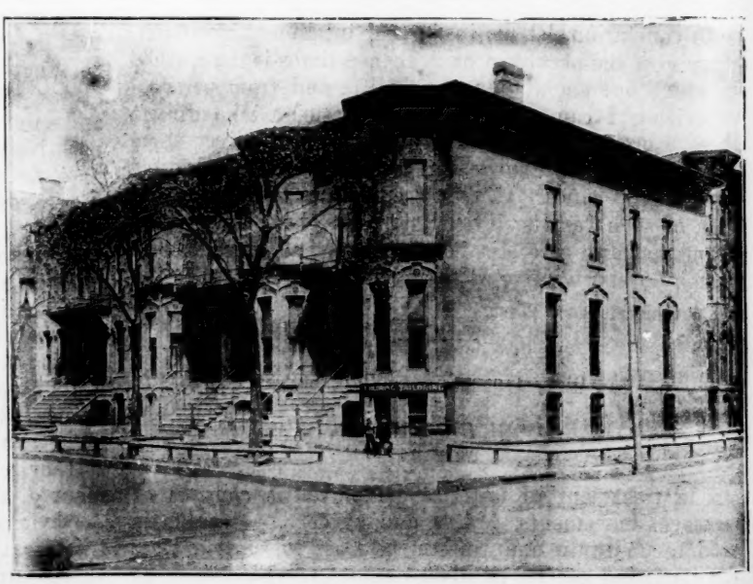


Fig. 1.—This picture shows the property first purchased at the corner of Dearborn Avenue and Indiana Street, containing five houses. The two on the north, or left, of the picture, occupied the site of the present old building.

THE HOME OF THE ASSOCIATION

A BRIEF HISTORY OF ITS MATERIAL PROGRESS AND OF THE GROWTH OF THE ASSOCIATION BUILDING

CHAPTER I. THE FIRST BUILDING

INTRODUCTION

This story, which will be a continued one, relates to the establishment and equipment of a permanent home for the American Medical Association and its JOURNAL. It is a good story and we feel that every reader of THE JOURNAL will be interested in it.

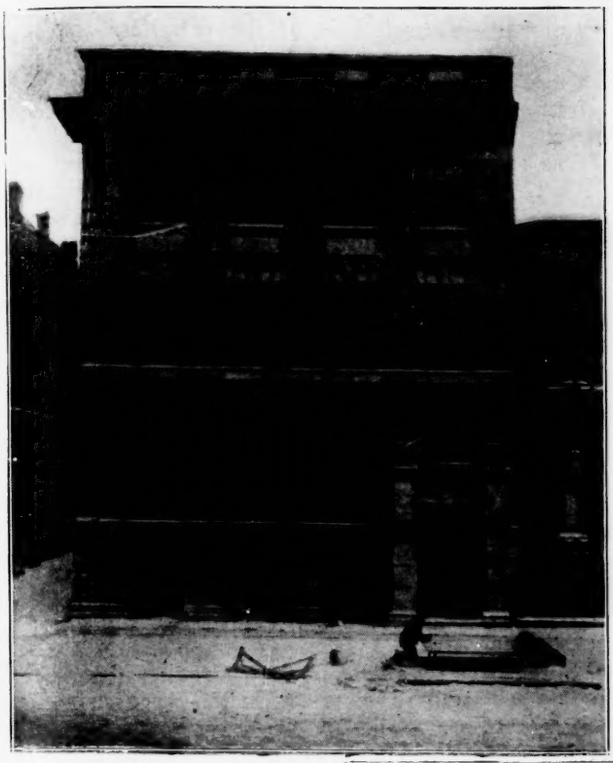


Fig. 2.—The three-story and basement building originally erected, and occupied in December, 1903.

A short time ago we printed a series of editorial articles detailing certain facts in the history of the Association, its aims and purposes, its progress in organization, and what it has done and is doing for the benefit of the medical profession and for the people. The present series of articles constitutes a brief record of the triumphs of the Association on the material side, and particularly of its efforts to found a permanent home for its material activities.

THE DAYS OF THE TRANSACTIONS

Without a home, an organization, like a man, is not only a wanderer, but is also greatly hampered in usefulness. During the early years of the American Medical Association, when the membership was small and the cost of publishing the Transactions practically exhausted the revenues of the organization, and often more than exhausted them, the Association had no headquarters, except under the Permanent Secretary's hat. Except during the four days of the annual session the Association was practically non-existent. References were made occasionally in presidential addresses to the desirability of a permanent home and headquarters, but for a long time it ended in a desire and a hope.

THE START OF THE JOURNAL

When in 1883 the Association decided to publish a journal, some kind of editorial offices became a necessity, and the establishment and development of a home dates from that period. Dr. N. S. Davis, who was the leader in the establishment of THE JOURNAL, became its first editor, and editorial quarters were opened in his office. And here they remained from the first issue of THE JOURNAL, July 4, 1883, until November 24, 1888, when they were removed to 68 Wabash Avenue. September 1, 1894, in that early wandering period, THE JOURNAL moved to 86 Fifth Avenue, and May 1, 1896, to 61 Market Street. Each of these removes was made necessary by the growth of THE JOURNAL, which necessitated increased space and facilities. The circulation at the latter date had reached nearly 8,000 copies weekly. In 1902 the circulation had leaped to over 25,000 copies weekly.

At the session of that year the trustees reported that the lease on the Market Street property would soon expire, and that sufficient room could not be secured in the building to accommodate the rapidly growing needs of THE JOURNAL. The increasing prosperity of the Association and the enlarged earning capacity of THE JOURNAL justified the trustees in considering the purchase of real estate for a permanent home for the Association, and they were authorized to do so.

THE FIRST BUILDING ERECTED

Accordingly in March, 1902, property was purchased on the northeast corner of Dearborn Avenue and Indiana Street, a few blocks north of the Chicago river and close to the "loop" district, the business center of Chicago. This property, 100 feet on Dearborn Avenue by 80 feet on Indiana street, contained at that time five two-story and basement houses, and

Fig. 3.—The old home of the Association as it is at present, with the added fourth story erected in 1905, together with the remaining houses of the original purchase and the two three-story houses on the east (right side of picture) later purchased to secure additional ground space.

cost $42,000. The property as originally purchased is shown in Figure 1. Two of these houses—those on the north—were torn down and the erection begun of a three-story building, 40 by 80 feet, with high basement, of brick with stone trimmings. This building was completed, equipped and occupied December 1, 1902, and is shown in Figure 2. The cost was about $35,000. In the first four months of 1903 the circulation had reached over 27,000 and before the year was out, on account of the phenomenal growth of THE JOURNAL and its business, it was again crowded for room, and it was necessary to extend the building. An opportunity was given about this time to purchase at an extremely low price—approximately $15,000—the adjoining property on the east, consisting of a lot 40 by 100 feet, containing two three-story and basement houses. The purchase was made in June, 1903. This made the entire ground space owned by the Association 100 by 120 feet. In 1905 the old building was enlarged by the addition of another story and by extending it back 40 feet, completing the building as at present occupied. Thus it had become a four-story building, with a high basement 40 by 120 feet in dimension. It is shown in Figure 3 with the houses on the south and the two last purchased on the east.

THE FIRST BUILDING OUTGROWN

But the circulation of THE JOURNAL did not remain at 27,000. Far from it. In 1909 the number printed had mounted to 55,000 weekly, and the collateral printing and publishing business and the work of the Directory Department, and of the Councils on Medical Education and on Pharmacy and Chemistry, with its chemical laboratory, which had been established meanwhile, had grown in a corresponding manner, and again there was not room enough. And so, bursting through its walls, the business oozed out into one of the adjoining houses. The tenants moved out, additional presses were placed in the basement and the other floors of the house were occupied as offices and by the mailing department. But this was only a temporary makeshift. The cry was still, MORE ROOM!

How that cry was answered will be told in succeeding issues.

THE VALUE OF EHRLICH'S NEW DISCOVERY "606" (DIOXYDIAMIDO-ARSENOBENZOL)

A PRELIMINARY REPORT FROM PERSONAL OBSERVATIONS

B. C. CORBUS, M.D.

Adjunct Professor of Genito-Urinary Diseases, College of Physicians and Surgeons, Medical Department, University of Illinois

CHICAGO

Originally the expression, "specific therapy" was understood in a purely chemical sense, which is evident from the fact that from olden times the administration of mercury, iodin, etc., was designated as specific therapy. More recently immunotherapy has laid claim to the same designation and has pushed the chemical into the background.

The two forms of treatment may come together in important points, since chemotherapy may also lead to the formation of antibodies, but there are very great differences. In immunotherapy the various antibodies are formed as products of complicated reactions on the part of the animal organism. These antibodies are strictly specific in nature and act exclusively on the respective bacteria or their toxic products. They do not of themselves exert any injurious action on the organism. For this reason the serum therapy represents the ideal of all forms of treatment, in that the protective substances kill the parasites without injuring the body, and therefore every thinking person will give preference to immunotherapy (whether active or passive) whenever it is applicable.

Unfortunately, in contrast to diseases due to bacterial action, in a whole series of infectious diseases the successful formation of antibodies in the required manner is impossible. This is particularly true for diseases produced by protozoa, malarial plasmodia, trypanosomes, piroplasmas and the pathogenic spirochetes. In these diseases the clinical course indicates that the healing reaction of the organism is seriously hindered by peculiarities characteristic of the parasites. In such cases we must attempt to kill the parasites chemically; the possibility of doing this is known. I need only refer to the use of quinin in malaria, mercury and iodin in syphilis and atoxyl in trypanosomiasis.

The substances employed, however, are poisons, and do not, like the antibodies, leave the body unharmed. Hence the importance of the careful, detailed study to which Ehrlich[1] has devoted himself for a number of years. Ehrlich has found that certain chemical substances are particularly attracted to certain parasites; they are parasitotropic. Being poisons and capable of injuring the cells of organs, these substances are also organotropic, and their curative value in parasitic diseases depends on the existence of a proper relation between the parasitotropic and organotropic properties.

After many experiments in various directions, Ehrlich has finally succeeded in preparing a substance for the cure of syphilis in which, if it is used in proper dosage, the parasitotropic power sufficiently overshadows the organotropic to make the latter a negligible quantity. He has come to the conclusion, after years of animal experimentation that the most effective treatment consists in administering a single dose of such strength that it sterilizes the animal completely by destroying all the parasites in the organs, and thus produces a complete healing or cure. This act of sterilization with one dose Ehrlich designates as "therapia sterilisans magna."

The chemical "606" was first tried in Professor Doctor Konrad Alt's[2] clinic in Uchtspringe (Altmark) in September, 1909, by Dr. Hoppe. Twenty-three patients were treated, mostly syphilitic paralytics. The dose employed was 0.3 gm. The arsenic was eliminated slowly and found in the urine as late as the tenth day. Professor Alt asked Schrieber of the Altstädtische Krankenhaus in Magdeburg to try the remedy in recent syphilitics; twenty-seven patients so treated improved with astounding rapidity; the dose used, however, was still only 0.3 gm., half the quantity now given. Wechselmann[3] was the next to report, June 22, 1910. He gave 0.45 gm. to women and 0.6 gm. to men. At present Wechselmann has a record of the largest number of patients treated, something over 900.

The Virchow Krankenhaus in Berlin offers the largest field for experimentation. I can testify to the authenticity of the statement of Dr. Siesskind,[4] Wechselmann's first assistant, that spirochetes begin to disappear in from eighteen to twenty-four hours after injection. Here I saw at least seven babies that had been treated; the average age was ten days; the patients had macular eruptions, fissures and mucous patches. All showed a wonderful improvement in four or five

1. Ztschr. f. ärztl. Fortbildung, January, 1909, No. 23, p. 1.
2. München. med. Wchnschr., March 15, 1910, p. 561.
3. Berl. klin. Wchnschr., July 4, 1910, p. 1261.
4. Personal observation.

days. Taege[5] has treated a syphilitic infant by injecting the mother; both improved. In 100 gm. of the mother's milk no trace of organic arsenic and only a trace of inorganic arsenic could be found. He concludes that the infant was influenced, not by arsenobenzol, but by endotoxins. The substance has been given to mothers while the fetus was yet in utero without either producing death or causing abortion.

The results in secondary and tertiary lesions were equally brilliant. Wechselmann asserts that there is an increase in body weight. This is certainly true of the old cases in which there were tertiary manifestations; however, it was necessary in some refractory cases to give a second injection, which may have been due in part to the method of administration. He offers the explanation that the spirochetes may be stored up in the cutaneous, glandular, muscular or osseous tissues, and later find their way into the blood-stream. He showed several patients with syphilitic periostitis in whom the pain disappeared over night by crisis, as it were.

Lesser[4] in the Charité, while not having such an abundance of material, has handled his cases excellently. Up to the present time, he has treated 160 cases. I saw one baby three weeks old in which the cutaneous lesions disappeared in five days. Here also a large gumma of the tongue had completely healed in a remarkably short time. One patient with malignant syphilis with cerebral symptoms, in whom no cure was possible, nevertheless improved visibly. In each of his cases, Lesser has resorted to only one injection. This, I think, is due in a large measure to the technic that is used. It is a modification of Alt's, and was judged to be the best by the numerous physicians who were in daily attendance. It is the technic that I am employing, not only on my patients, but also on the patients who were referred to me by Dr. Ehrlich for treatment. A detailed description of the technic will be found below.

A. Neisser[6] has treated 126 patients. He asserts that in the total of 2,500 patients treated with "606," at the time of his writing, not a single serious organic disturbance occurred which could be definitely attributed to the remedy. Its effect surpasses anything that has been used, even mercury and iodin. Like Lesser, he uses a solution that is as nearly neutral as possible; hence he never saw instances of severe pain. He says that the action of a neutral solution seems to be slower and more prolonged. H. Isaac[7] from the old Lassar clinic says that there is an incomparable, often rapid, and thorough action of the remedy on spirochetes observable and a prompt absorption of pathologic-anatomic changes produced by them; he finds that lesions on the mucous membrane are most rapidly benefited. From all the prominent clinics in Europe, most astonishing reports are published.

The specific has been tried only in a few cases of parasyphilis. In a limited number of tabetic cases with girdle pains, etc., the relief has been prompt, but this, in the absence of a positive Wassermann, may have been due more or less to suggestion.

TECHNIC

The surprisingly large number of different technics is indeed confusing, as each clinician seems to be endeavoring to attach his own special method to Ehrlich's discovery. The following are references to a few methods, all of which I have seen used: those of Alt and Hoppe,[2] Wechselmann and Lange,[3] Michaelis,[8] Kromayer,[9] and the intravenous method of E. Schreiber and J. Hoppe.[10] I shall describe, however, only the technic of Lesser for the following reasons: 1. The substance is the most easily kept sterile. 2. The method is the simplest to carry out. 3. It is the most lasting in its effects and most efficient in its results.

LESSER'S METHOD

Take a graduated cylinder with ground glass stopper, in which there are about one dozen glass pearls to assist in mixing. Add "606" salt; immediately add 15 c.c. hot water, shake vigorously until every particle of the salt is dissolved; then add 2 c.c. normal sodium hydrate (NaOH) solution; a precipitate occurs. Then continue to add sodium hydrate solution in very small quantity, shaking vigorously after each addition, until the solution begins to clear; then drop by drop, until we have a clear solution. This should be neutral; if the cylinder does not contain 20 c.c. of solution, sterile water is added up to that amount. Then 10 c.c. of this solution is injected deep into the buttocks on either side, always taking care to cleanse the parts with soap, water and iodin.

In every instance patients should be sent to the hospital for treatment, and care should be taken that they rest for one-half hour after the injection.

Ehrlich lays great stress on the fact that no patient who has ocular disease involving the fundus, cardiac or kidney disease, should receive any of the specific.

Neisser[6] reports that the injection did not produce fever in non-syphilitics; the temperature rise in syphilitics (general reaction) is attributed to endotoxins liberated from the killed spirochetes. Vomiting occurred during fever occasionally. The vomitus was examined in four cases and never contained arsenic.

In three cases Neisser[6] saw erythematous eruptions, which disappeared rapidly.

All investigators report an increase of leukocytes immediately following the injection.

Neisser[6] advises local treatment of syphilitic lesions, either excision or local treatment with calomel in addition to "606."

THE CURATIVE EFFECTS OF "606"

The idea that Ehrlich's new substance will prove a panacea for every case of syphilis is a mistake, notwithstanding the fact that after a single injection the spirochetes disappear from primary lesions, in from twenty-four to forty-eight hours, and that old indolent lesions heal with remarkable rapidity.

The results are best divided into two classes: (1) immediate; (2) remote.

1. *Immediate Effects.*—In all primary lesions in which the sore is of the erosive type, if taken before a positive Wassermann is present, one dose containing 0.6 gm. seems to destroy all the spirochetes. This is confirmed by Neisser.

Excision of the primary lesion, while fraught with some danger to the surgeon, accomplishes a great deal, as a large number of spirochetes are thus removed. This permits the specific to act in excess on any that may still be in the system.

In the cases in which the initial lesion is marked by extensive sclerosis a second dose has been necessary.

5. München. med. Wchnschr., Aug. 16, 1910, p. 1725.
6. Berl. klin. Wchnschr., Aug. 8, 1910, p. 1485.
7. Personal communication.
8. Berl. klin. Wchnschr., July 31, 1910, p. 1491.
9. Berl. klin. Wchnschr., Sept. 12, 1910, p. 1908.
10. Berl. klin. Wchnschr., Aug. 1, 1910, p. 1448.

because the substance in the circulation was not able to permeate the chancre on account of the extensive endarteritis present; so in this class of cases, whenever it is possible without undue loss of tissue, excision is demanded if we expect one injection to have its maximum effect.

The immediate results in secondary lues, if occurring early in the infection, are good so far as external manifestations are concerned, but in late secondaries it has been necessary to repeat the injection in some instances.

It may be possible in the future to give a preliminary treatment of potassium iodid in this class of cases, and clean house, as it were, thus bringing the spirochetes into the blood-stream. Previous treatment with mercury and potassium iodid does not, however, seem to have any effect on the efficiency of the treatment.

Tertiary lesions show the most marked improvement. This is due, as suggested by Ehrlich, to the fact that there are a large number of antibodies in the circulation and one injection stimulates the organism in a wonderful manner. It may also be explained on the hypothesis that the strain of spirochetes is well-nigh exhausted in virulence and that a little of the specific acts in a far-reaching manner.

I have intentionally omitted mentioning any of the other forms of syphilis, as the experiments were carried out in a large measure only in cases in which there were active, visible lesions.

Dr. Ehrlich[11] does not wish the specific tried at first on any except the most suitable cases, knowing full well the danger of complications in patients who are already debilitated by disease.

2. *Remote Effects.*—We have now been treating syphilis many hundreds of years with mercury, and our knowledge in regard to its efficiency or inefficiency is well established. All reports that are published on the new discovery must be regarded as preliminary, because in syphilis, more than in any other disease, freedom from relapses for years is necesary before a cure can be established.

At present our success in healing syphilis with mercury has been obtained by an extremely energetic treatment, begun early, our aim being to get a negative Wassermann and to keep it negative throughout the whole time.

If we have in "606" a specific that in one or two doses will kill all the spirochetes in the system, then we have indeed a wonderful remedy.

But how can we tell?

THE WASSERMANN REACTION

In the light of our present knowledge, our only hope lies in the Wassermann reaction. With the Wassermann reaction, under mercury treatment, it was possible with a fair degree of certainty to tell when we had the disease under control, but unfortunately after the administration of "606" we have a different picture. Here we have a large number of dead spirochetes in the system and a hyperleukocytosis, and we may have a persistent positive reaction; on the other hand, a few spirochetes may be living and later be so insignificant as to permit a negative reaction, and still later a positive one.

If we are to make use of the Wassermann test—and this seems to be the only method now at hand—we shall have to wait until numerous statistics are available before we can draw definite conclusions.

On the continent every well-regulated clinic has at least one or two Wassermann laboratories, and reports are beginning to appear. Professors Alt and Hoppe[2] were the first to report Wassermann findings. Of the original twenty-three patients, mostly paralytics, out of eighteen cases with a positive Wassermann, two became negative after one injection of 0.3 gm. "606." There was strong diminution in two others, and noticeable diminution in three.

Neisser[6] reports on primary lesions treated soon after infection that only 10 per cent. of patients with positive Wassermann became negative, but the dose was only 0.4 gm.

Schreiber[9] and Hoppe report that of fifty-two patients treated and observed for fifty days or longer, 84.6 per cent. lost a positive Wassermann. Four other patients lost the reaction later, making 92.3 per cent. The earliest change from positive to negative occurred in four days, the longest after seventy days. In one patient treated intravenously the Wassermann became negative in forty hours.

M. Meyer[12] reports sixteen cases, of which twelve were cases of paralysis. In four of the twelve the Wassermann was not affected (dose too small); in four it became less decided for a while; in four treated intravenously it became at once negative. There was no marked improvement of the paralysis.

Karl Lange[13] reports 268 patients treated.

In 153 cases in which the Wassermann was first positive, it became negative four or five weeks after treatment; nine negative cases treated with mercury before "606" was injected, remained negative; two cases of primary syphilis previously negative, treated with the substance remained negative; five cases of tertiary syphilis became positive after injection; two changed to negative, and one died with positive, two were still positive; two cases in which Wassermann had appeared negative became positive; one later became negative, the other one partially positive; ninety-seven cases remained positive.

We can see from the foregoing that the results of the Wassermann test up to the present time are very variable.

For a Wassermann test to be of value in a given patient it must become negative and remain so for at least one and one-half years; without this we are justified in not accepting any case as an absolute cure without the lapse of a long period of freedom from the disease.

CONCLUSIONS

Looking into the future, it seems hard to prophecy what we are to expect from a single injection. In order that our results may fulfil the theory of Ehrlich's "therapia sterilisans magna," the following conditions are necessary: first, one must not administer "606" in any condition that is not of spirochetal origin. Second, there must be absolute certainty of diagnosis by means of the Wassermann reaction or by examination for spirochetes. Third, the most careful and painstaking technic in preparing the substance for injection and in the injection itself must be observed.

100 State Street.

11. Personal communication.

12. München. med. Wchnschr., Aug. 16, 1910, p. 1765.
13. Berl. klin. Wchnschr., Sept. 5, 1910, p. 1656.

Therapeutics

PREVENTION OF ACCIDENTAL VENEREAL INFECTION IN SCHOOLS

In comparatively recent years the medical profession has succeeded in securing tangible results in promoting public health by means of medical inspection of the children in the public schools. The most striking of these results have been obtained chiefly in diseases which are readily recognized by moderately trained observers such as imperfections of the eyes, ears, nose, throat, skin, bones and joints. The frequency of the occurrence of venereal diseases among school children has in but few instances been noted, and the prevention of these diseases has but rarely been attempted.

The necessity for studying this subject more carefully and for the inauguration of more effort to prevent these diseases among school children is evidenced by the paper which Dr. Ira S. Wile, of New York, has recently presented (*New York Medical Journal*, Sept. 10, 1910). To show the necessity for this study he gives us the statistical facts that 20 per cent. of all venereal diseases is acquired before the twenty-first birthday; that the annual average of deaths from syphilis has increased from 4.1 per cent. in 1901 to 5.4 per cent. in 1908 in every 100,000. The recorded number of deaths ascribed to gonorrhea has remained unchanged during these years, but this does not take into consideration deaths due indirectly to the gonococcus. He quotes Dr. Morrow that it is a "conservative estimate that in this country the morbidity from gonorrhea would represent 60 per cent. of the adult male population, and that of syphilis from 10 to 15 per cent.," while it has been stated that in France 20,000 children die yearly from syphilis. It is probable that many deaths of children not ascribed to these diseases are really caused by secondary consequences of them. The primary cause of death may be concealed, if known; or may not have been diagnosed, so that deaths from various inflammations, peritonitis, and brain tumors may rightly be due to these diseases.

Probably there is no practicing physician who could not relate one instance, and perhaps a large number of instances, where he knew of some individual who came in more or less close relationship to one or more children while he was suffering from syphilis or gonorrhea. We therefore should not be surprised that many school attendants, such as janitors, scrub-women, or other adjuncts to the school, are infected with one or other of these diseases, instances of which are mentioned by Wile.

A study of school children has shown that the occurrence of syphilis and gonorrhea, generally accidentally acquired, between the ages of 4 and 16 is not infrequent. Though some schools and at least one city compel examination of the sexual organs of children before their admittance, this examination cannot be urged. Such examination is of little value unless careful microscopic examinations of secretions are made. It is, however, perfectly possible that the teacher of each room should note if a child requires too frequently to leave the room for urination, and should have the school inspector or the family physician decide the cause of such irritation or disturbance. The teacher should be urged especially to note evidences of sore mouth, sore eyes, enlarged glands, and eruptions ever so simple, and should call the school inspector's attention to such instances. The laboratory departments of the various boards of health should be as ready to examine, without charge, slides and secretions for gonococci and for the *Spirochæta pallida* as they are to make typhoid, malaria, diphtheria, and tuberculosis examinations. In other words, there can be no excuse for not having every suspected child thoroughly and properly examined, and if the findings are positive such a child should be as surely removed from school as though he had a distinctly recognized contagious disease.

The various methods of acquiring these diseases accidentally and innocently are summed up by Wile as: "by fondling, kissing, using infected glasses and infected eating utensils, from the use of common towels, pencils, sponges, and polluted toilet seats." Occasionally there was more direct contact, as "by exchanging chewing gum, interchange of mouth toys, and sexual contact."

The obvious conclusions to draw from these facts and investigations are that the toilet seats should be daily cleansed with strong antiseptic solutions. Small, individual towels should always be ready for use at the school basins. Drinking fountains must be substituted for the common drinking cup. There must be personal desk articles for each child. Short, hygienic talks should be given the children as to the danger from exchanging and putting into the mouth articles that belong to other children. They should also be taught cleanliness of their own mouths, hands, and persons. Such talks should not be given once or twice, but repeatedly, at least once every term in every room.

EXTRA-UTERINE PREGNANCY

A correct and prompt diagnosis and an immediate operation in this condition are necessities for the preservation of the life of the mother. It is not intended in this note to discuss the data obtained by physical examination, but the symptoms of suspicion of such pregnancy are so well brought out in a carefully prepared table of ten cases of this condition by Dr. H. M. Lee, of New London, Conn. (*International Journal of Surgery*, March, 1910) that it is worth while to present them again here.

These ten patients, varying in age from 26 to 43, all missed the proper date for the menstrual period from a week to more than a month. All, however, had a menstrual flow from a week late to a month late. The character of the flow in all of these patients was scanty and dark. There was sharp abdominal pain in every instance, even in the one of the nine that did not rupture. The duration of the pregnancy before the pain and rupture averaged 8 weeks. The hemorrhage was into the broad ligament twice and into the peritoneal cavity 7 times. After rupture the pulse varied from 100 to 140, while the temperature in every instance after rupture was above 99 F., but in only one instance as much as 100 F. The time of operation after rupture varied from 3 hours to 48 hours. In each of the 10 instances the patient recovered, and 6 of these women have since again been pregnant.

Uses of Glycerin.—No substance is equal in power to glycerin in disguising nauseous medicines. Castor oil, turpentine, solutions of iron and various other medicines can be diluted and at the same time almost completely disguised by glycerin. As Wood says: "It seems to envelop the medicinal substance and prevent its action on the palate."—G. D. Lind, in *West Virginia Medical Journal*.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 DEARBORN AVENUE . . . CHICAGO, ILL.

Cable Address . . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

[*For other information see second page following reading matter*]

SATURDAY, OCTOBER 22, 1910

A SANER VIEW OF CHOLERA

The constant reader of the daily newspaper, if he reflects on the difference between our national attitude respecting the cholera menace in 1892 and that almost universally exhibited at the present day in regard to a similar situation, will be tempted to conclude that the American nation has progressed toward a greater self-control. The attempted "quarantine" at Fire Island eighteen years ago cannot have been forgotten by many of our readers. Recollections of the barbarities there practiced in the name of sanitary protection may even yet cause a feeling of shame in the citizen jealous of his country's reputation for sanity and soberness of judgment. To be sure, the panic of 1892 was quickly over, so that the New York papers could soon speak reprovingly of "the savagery that has lately disgraced our shores," but while it lasted it was acute and to all appearances amazingly general. As a matter of fact, cholera did get into New York in spite of the brutal quarantine measures that were employed. Perhaps more would have got in with a less barbaric quarantine, but it could probably have been suppressed quite as readily as the smaller quantity.

How different it all is at present! Cholera is now being brought to our shores, but there is little or no newspaper hysteria, little or no general alarm. National and local authorities are active in the employment of proper measures of diagnosis and exclusion, but no tendency has been displayed to revert to barbarism. The cholera danger, such as it is, is viewed soberly and calmly without hysterics and without belittlement of the real peril.

The actual situation has been fully set forth in our news-columns of the last few weeks. Cholera has been more prevalent in parts of Europe the past season than for many years. The disease, furthermore, is widely distributed and many ports having important commercial relations with this country have been infected. It does not seem improbable that in 1911 a still further extension of the disease will occur. More cases may reach our Atlantic ports and it is by no means unlikely that some healthy "carriers" may escape detection and introduce the disease into the United States. But even so, does anyone believe that a "pandemic" of cholera is probable in this country under present conditions? If we consider simply the matter of public water-supply, the situation throughout the nation is highly reassuring. The majority of our large cities now have supplies into which little or no sewage enters or which are effectively purified by sand-filtration. In the absence or relative scarcity of sewage-polluted water-supplies, there is no likelihood of any general spread of cholera. Even in Russia at the present time the city of Moscow, which is the fortunate possessor of a good water-supply, is practically exempt from cholera, while St. Petersburg, with its badly contaminated river-water, has suffered severely. As an illustration of the changed conditions in this country compared with eighteen years ago we may cite the following sentence from a paper written by an eminent sanitarian in 1892, who calls attention to the fact that cities with a good drinking-water have nothing to fear from cholera, and continues: "The citizens of Philadelphia, Chicago, Lowell, Lawrence and Albany, on the other hand, may reasonably feel much concern about cholera." To-day the five cities which were then thus singled out for sanitary opprobrium—and justly so—all have good supplies of drinking-water obtained either by sand filtration, by substitution of ground-water for contaminated river-water, or by exclusion of sewage from the source of supply. The improvement brought about in these instances is, we believe, fairly typical of the improvement that has occurred in the country at large.

It is not possible nor is it especially important to determine to what degree the relatively slight alarm over cholera shown at the present time is due to just confidence in the increased wholesomeness of our public water-supplies. Other factors, such as the increased efficiency of the national and local public health service and our more complete knowledge of the ways and means by which cholera is spread, certainly are taken into consideration or at all events should be. The fact remains that we can now soberly face the possibility that a person harboring cholera vibrios may land in a seaboard city. We have no reason to show either unconcern or hysterical fear at the event.

THE OXYDONOR AND SIMILAR FAKES

It is sometimes hard to decide which is the greater—the impudence of the quack or the credulity of his victims. The comparative ease with which the medical faker is able, by the most preposterous of claims, to separate the fool from his money indicates the enormous potentialities in advertising. It might be supposed that an individual who set out to sell, as a panacea for most fleshly ills, a piece of brass pipe with one or two wires attached to it, would have a hard and rocky road before him. But such a supposition would be incorrect. Not only would the enterprising faker find customers for his

gas-pipe, but there would be such a demand for this most inane of "therapeutic" devices, that two or three imitators would immediately enter the market.

The original exploiter of what may be called "gas-pipe therapy," was one Hercules Sanche, who modestly described himself as the "Discoverer of the Laws of Spontaneous Cure of Disease." Of course, Sanche did not "discover" this long-known truth at all, but he did appreciate its commercial value. Starting with the premise that a certain proportion of sick people—and of those who think they are sick—will get well without treatment, or in spite of it, he cast about to devise a means of reaping a pecuniary reward from the operation of this natural law. Sanche might, of course, have used some harmless or unmedicated tablets and after describing at great length the marvelous properties inherent in them, have sold them with substantial profit to himself. This method of fleecing the public, however, besides being old and threadbare, was not altogether free from the probability of legal complications. He might have offered to sell "absent treatment" and have discoursed learnedly on the benefits and virtues of this wonderful therapeutic force. But "absent treatment" does not appeal to the average man who wants a tangible something in exchange for his dollars. Sanche finally hit on a device that was perfectly harmless—and worthless—and yet theatrical enough to make the purchaser feel that he was getting something for his money. He called it the "Electropoise," and it consisted, as described elsewhere[1] in this issue, of a piece of metal pipe closed at each end and with a flexible wire attached. That was all. It sold for ten dollars.

So popular did this humbug become that Mr. Sanche extended his operations by putting on the market a modification of the "Electropoise"—the "Oxydonor." This differed from the "Electropoise": It was shorter; it contained a stick of carbon instead of being empty; and it sold for thirty-five dollars instead of ten dollars. Coincident with his invention of the "Oxydonor," Sanche also invented a "force" or "power" which he christened "Diaduction." The "Oxydonor" was the instrument by which this "force" was supposed to be created. To operate the "Oxydonor," the distal end of the wire attached to it was applied to the wrist or ankle of the fool—we may be excused for using this term—who used it; the "Oxydonor" itself was placed in cold water and the "diaductive force" was expected to be thus generated.

The commercial success attending the exploitation of this fake was such that an imitation appeared under the name "Oxygenor" or the "Oxygenor King." This fraud, also, is described in detail elsewhere[1] in this issue. It differs but little from the "Oxydonor"—so little, in fact, that Sanche brought suit against the "Oxygenor" concern for infringement of patent. The court held, however, that such a palpable humbug as the "Oxydonor" was not entitled to legal protection.

1. Pharmacology department, page 1486.

More recently still, another fake of the same nature has been foisted on the public. It is called the "Oxygenator" and selling depots have been established in many cities. An elaborate booklet describes the virtues of this latest exponent of "gas-pipe therapy" and another new "force" has been invented to aid in selling it, *viz.*, "Oxypathy." In many ways the latest type of this form of charlatanry is the worst, inasmuch as claims are made for it that are not only absurd but dangerous. For instance, the following statements occur:

> DIPHTHERIA: This overwhelming child's disease finds its supreme master in the *Oxygenator*. No earthly power except the *Oxygenator* can take the slowly choking child, and with speed, simplicity and safety, bring it back to health.
>
> Don't jeopardize the health and life of your children by allowing to be injected into their veins and blood the often fearfully contaminated and death-dealing serum of an animal, otherwise known as antitoxin.

It is difficult to restrain one's indignation at the thought that such viciously cruel lies as these are permitted to be scattered broadcast. Let the neurotic and neurasthenic adult, if he can convince himself that a nickel-plated piece of gas-pipe possesses curative properties, experiment with it on his own person if he wishes. But that a helpless child in the throes of a fearfully dangerous—and yet, rightly treated, curable—disease, should be allowed to suffer and die because ignorant parents have been persuaded to rely on these mechanical frauds, is no less than criminal. As for the miserable harpies who for a few filthy dollars will write such cold-blooded untruths as those quoted above, the safety of society demands that they be put with thieves and murderers, where they can do no further harm.

To sum up: The "Electropoise," the "Oxydonor," the "Oxygenor" and the "Oxygenator" are utterly worthless except as a means of enriching their exploiters. Their therapeutic value, aside from the element of suggestion that may be induced in those simpletons who are willing to pay from ten to thirty dollars for a piece of nickel-plated tubing, is absolutely *nil*. As already said, if adults wish to squander their money on such foolishness and are content to confine the "treatment" to their own persons, well and good. If they have nothing much the matter with them they may believe they have received benefit; if they are dangerously ill, Nature will probably exterminate them as unfit. But let no person try to "cure" the helpless child with such frauds; as soon as that is attempted, such an individual ceases to be a harmless idiot and becomes a dangerous one.

POLIOMYELITIS

The disease long known as infantile spinal paralysis, or acute anterior poliomyelitis, has acquired of late a new and vital interest for many physicians. This interest has been aroused by the numerous and wide-spread epidemics, especially in this country, and by the gratifying contributions to our knowledge of the disease, nota-

bly those of Flexner and Lewis from the Rockefeller Institute. Within three or four years, upward of five thousand cases have been reported in the United States, and it is quite certain that many more have escaped detection and record. Extensive epidemics have occurred in Massachusetts, New York, Vermont, Pennsylvania, Virginia, Michigan, Wisconsin, Minnesota, Iowa, Nebraska and Kansas. No community or family, at least in the northern states, is exempt from the possibility of its invasion, and, while the approach of cold weather will diminish its incidence this year, the advent of next summer may bring this dread invader to the door of any physician.

It is of the utmost importance, therefore, that every practitioner should acquaint himself with the recent advances in our knowledge of this disease, should be alert to detect its first appearance in his practice, and should prepare himself to cope with it effectively.

The causative agent has been shown by Flexner and Lewis to be an ultramicroscopic organism of great potency, resistant to freezing, drying and glycerinization, infectious and quite certainly contagious. It is resident in the body of the afflicted person—in the cerebrospinal axis, the cerebrospinal fluid (at least in certain stages), the mesenteric and other lymph-glands, the nasal mucous membrane, the saliva and possibly elsewhere. It is discharged from the body chiefly by way of the nasal mucous membrane and probably finds its principal avenue of entrance by the same route, though it has been successfully inoculated in several other ways. Whether or not the virus is ever conveyed by insects is undetermined, but the possibility of such conveyance warrants the most thorough precautions to prevent it.

The numerous opportunities afforded of late for autopsies on patients dying in the early stages have made it possible to study much more exhaustively than heretofore the pathogenesis of the disease, and to set at rest former controversies in reference thereto. There is a striking unanimity in the reports of these recent pathologic observations and deductions from all quarters. The alterations found are those of a specific general infection, expending its destructive energy chiefly on the gray matter of the cord and brain. The vascular changes are primary, but changes are found also in the posterior root-ganglia, the nerve fibers, heart, liver, kidney, lymph-glands and elsewhere. The pathology of the disease has been concisely summarized by Robertson and Chesley.[1]

The disease is characterized by a sudden onset, marked prostation, headache, pain and rigidity in the back of the neck and along the spine, tenderness and pain on motion of the extremities, giving rise to a modified Kernig sign, fever—usually moderate in degree—rapid pulse, sometimes vomiting, and usually obstinate constipation, rarely diarrhea. Involvement of the encephalon is characterized by delirium, convulsions and stupor. The characteristic paralyses, in both the spinal and encephalic types, constitute the most convincing diagnostic sign, but these are sometimes delayed for several days, and are often absent in the abortive cases, which are as capable of transmitting the infection as are those of severer type.

The diagnosis should not be difficult, even in the early stages. On the prompt recognition of the disease at this period depends the physician's ability to check the advance of the epidemic and to safeguard his community. The diseases with which poliomyelitis is most likely to be confounded are influenza, typhoid and paratyphoid, rheumatism, auto-intoxication with meningism, possibly some one of the exanthemata (a rash is not an infrequent accompaniment of poliomyelitis) and finally epidemic meningitis. None of these should present serious difficulty to the careful observer, except meningitis; and here the lumbar puncture of Quincke affords a reasonably certain means of differentiation. Flexner has described the characteristic appearance of the cerebrospinal fluid in poliomyelitis at various intervals after its inception, and the persistent absence of the *Diplococcus intracellularis* in three or four specimens almost negatives the possibility of epidemic meningitis. The meningitides due to other organisms are usually secondary to their invasion of other organs. Every practitioner should have always at hand the appliances requisite for this simple procedure, which involves little more difficulty, pain or danger than a hypodermatic injection.

The first duty of the physician, after a diagnosis of possible poliomyelitis has been made, is to endeavor to protect the family and the community by the prompt isolation of the patient and the scrupulous disinfection of all articles which may have become contaminated with the discharges, especially those from the nose and mouth. If such complete isolation cannot be secured in a suitable room in the house, or by the removal of the patient to an isolation hospital, the erection of a tent with a board floor, to accommodate the patient with nurse or mother, offers an admirable solution of the difficulty. In the city a suitable site can be found in a vacant lot or on the porch or roof of house or apartment. The experience of many physicians in the treatment of tuberculous patients, and of Northrup and others with the open-air treatment of infants and children, has demonstrated that such an environment is not only safe but advantageous even in severely cold weather. Fortunately the season of prevalence of poliomyelitis is the summer when the prejudice of the laity is not likely to obtain against the consignment of a child to a properly constructed tent. If every case of suspected poliomyelitis or of any other infectious disease, were to be promptly isolated by some such arrangement many virulent epidemics might be nipped in the bud, drastic

1. Robertson, H. E., and Chesley, A. J.: Pathology and Bacteriology of Acute Anterior Poliomyelitis, THE JOURNAL A. M. A., Sept. 17, 1910, p. 1013

quarantine measures avoided, and an enormous saving of illness, death and wretchedness effected. Early diagnosis, prompt isolation and thorough disinfection afford at present the only effective measures for the suppression of infectious poliomyelitis, as of most other infectious diseases.

The curative treatment of the individual patient is fully discussed in the articles by McClanahan, Sachs and Ridlon, prepared at the request of THE JOURNAL, which appear elsewhere in this issue.

Current Comment

TEACH THE TEACHERS

The September number of the *Bulletin of the North Carolina Board of Health* is a teachers' edition, specially prepared for the instruction of the public school teachers of the state. It contains articles on the importance of the recognition of physically defective children, the movement for oral hygiene in the public schools and its importance, the medical inspection of public school children, the value of science teaching in the grades and high schools, and the relation of childhood and youth to public health. Illustrations show the dangers of the common drinking-cup. Such bulletins issued under the authority of the state board of health and distributed to school teachers, parents, and pupils of the high schools are a most valuable means of public instruction on sanitary and hygienic questions.

CONTAMINATED WATER-SUPPLIES AND SENSITIVE OFFICIALS

In one of the most important reports of recent years on typhoid fever in a large city, Dr. C. Hampson Jones, assistant commissioner of health of Baltimore, comments very justly on a common official, not to say commercial, attitude toward any criticism of a public water-supply. "Last of all, we will consider as a possible source of some of the typhoid fever infection our drinking-water. Of all the ten alleged possible sources of typhoid fever in our city, this one must be mentioned with caution. The other nine possible sources may be heralded throughout the land, and no dissenting voice will be heard; no one will feel himself personally aggrieved. But it is not so when the tenth source, water, is even hinted at as a possible source of some of the cases of the fever." It is possible to say hard words about lack of sewer connection, abundance of opportunity for fly-breeding and uncleanliness in general, but the water-supply must be approached with reverent touch and not lightly condemned or even suspected. The reason for this feeling is plain. A water-supply exposed to contamination is now generally recognized as a commercial disadvantage, as an item against the interests of the city. "Conventions" are apt to give a wide berth to a city with bad drinking-water and in some cases are transferred to a rival community, as has recently happened at Rutland, Vt. The mildest censure or most friendly warning may be made to seem bitterly offensive. At the recent meeting of the Central States Water Works Association at Indianapolis, Mr. Paul Hansen made a strong plea for a change in this particular. The attitude of some officials is stated very frankly: "We find otherwise competent and reliable water-works superintendents zealously defending water-supplies known to be polluted or subjected to the possibility of pollution. The argument used in nine cases out of ten is that the water cannot be harmful since no cases of typhoid fever or other diseases have been definitely traced to its use. This argument is sometimes used in the face of the presence of an abnormally high death-rate from typhoid fever." It is, however, an encouraging sign to find sensitiveness displayed at all. It is well to have a pure water-supply considered as a municipal asset.

ILLEGIBLE PRESCRIPTIONS

Many of us indulge in hasty penmanship, especially in such important matters as the writing of prescriptions, thereby giving the profession a reputation for carelessness in this respect which, on the whole, is undeserved. The excuse frequently given is that the physician is too busy to spend time over such a trivial matter as chirography. It is just possible that when one considers one's time too valuable to permit the doing of good work, the valuation placed on that time is too high. The writing of a prescription or a certificate is as essential a part of a physician's work as the making of a diagnosis or an examination; and neglect to write a prescription legibly may entail as serious consequences as neglect of other branches of professional duty. If there is any vocation in which there are no trifles—in which there is no excuse for negligence at any point—it is the practice of medicine.

MEDICAL RESEARCH AND CANCER

Through medical research many problems relating to the etiology, diagnosis and treatment of disease have already been solved, and so much has been added to the positively known facts of medicine as to place that branch of learning among the sciences. Each discovery usually leads directly to the solution of numerous other related problems. For example, the discovery of bacteria not only revealed the specific causes of several diseases but led to positive methods of identifying different forms of bacteria and to effective methods of treatment by antitoxins, serums and otherwise. Each discovery has given added impetus to research along other lines, and has encouraged the belief that many other diseases, such as cancer and tuberculosis, will sooner or later be shorn of some of their terrors. Most of all, however, these successes have attracted the attention of men of wealth to the value of medical investigation, so they are now giving liberally toward the furtherance of this research. Not only do we hear frequently of gifts for our research medical schools, but funds especially for research are also being provided. In Great Britain the Imperial Research Fund has recently held its annual meeting, at which Mr. Arthur J. Balfour was a speaker. In this address, as reported by the London *Times*, Mr. Balfour shows how all great therapeutic problems must

be dealt with as a part of the great biologic whole. He shows also that most if not all of the discoveries have resulted from a broad scientific outlook which has produced unexpected conclusions and results in very different fields apart even from human pathology. For example, he shows how the investigation of microbic organisms led to finding in bacteria a common cause in the production of such utterly different things as alcohol, pearls and whooping-cough. At any rate, modern medical research requires not only the use of every variety of specialized apparatus, such as the microscope and the spectroscope, but also of the known facts and precise methods of physics, chemistry, physiology and biology, as well as of the more recent sciences of bacteriology, pathology and pharmacology. It will be interesting to know, if that time ever comes, through which of these sciences or what combination of these sciences the secret of the cause or treatment of cancer shall have been discovered.

Medical News

COLORADO

Sanatorium for Hollanders.—The Christian Benevolent Society for Consumptives has been incorporated to establish a sanatorium for the care of those suffering from tuberculosis. The institution will be located in South Denver and will receive Hollanders from all parts of the United States. The secretary of the institution is Rev. I. Van Dollen, Denver.

Women Elect Officers.—The Women's Colorado State Medical Society, at its third annual meeting held in Colorado City, October 11, elected the following officers: president Dr. Mary Hawes, Denver; vice-presidents, Drs. N. Eugenia Barney, Sterling, and Emogene P. Sherman, Idaho Springs; secretary-treasurer, Dr. Kate E. Geiger Yont, Denver, and auditor, Dr. Alice B. Guthrie, Denver.

Personal.—Dr. Horace G. Wetherill, Denver, was elected honorary president of the fifth International Congress on Gynecology at St. Petersburg.——Dr. Luke MacLean, Pueblo, has been appointed a member of the State Board of Medical Examiners, vice Dr. Carey K. Fleming, Denver, deceased.——Dr. Frank N. Carrier, Canon City, has been appointed surgeon in chief of the Chino Copper Company, Santa Rita, N. M.——Dr. Francis A. Sutorius, Florence, fell, October 3, and dislocated his right shoulder.

ILLINOIS

Personal.—Dr. Harry C. Hill, Streator, has returned from abroad.——Dr. William Lorenz, formerly a member of the staff of the Kankakee State Hospital, has been made assistant medical superintendent of the Wisconsin State Hospital, Mendota.——Dr. Walter G. Bain has been elected director of the pathologic laboratory of St. John's Hospital, Springfield.——Dr. Sidney G. Pratt, Buda, has returned after a year's absence greatly improved in health.——Dr. Joseph De Silva, Rock Island, has been elected secretary of the National Association of Penal and Reformatory Institutions.——The damage suit instituted by Dr. Jessie Bulkley Ogden, Waukegan, against the *Waukegan Gazette* for damages arising from a criminal action inaugurated by the state against Dr. Ogden, following the death of a patient, is said to have been taken from the docket by her attorney, October 5.

Chicago

Personal.—Dr. Robert Dodds was thrown from his automobile in a collision with a trolley car October 10, and sustained painful injuries.——Dr. and Mrs. Joseph Zeisler and daughter, Dr. and Mrs. Cassius C. Rogers, and Dr. Norval H. Pierce have returned from Europe.——Prof. Carl S. N. Hallberg, for several years secretary of the Section on Pharmacology and Therapeutics of the American Medical Association, and a member of the Council on Pharmacy and Chemistry, is critically ill at his home in Chicago.

Cornerstone Laid.—The cornerstone of the Iroquois Memorial Emergency Hospital at 87 Market Street was laid October 15, in the presence of more than one hundred relatives of the victims of the Iroquois Theater calamity. Dr. William A. Evans, health commissioner, received the hospital on behalf of the city.

Scandinavian Physicians Meet.—The annual dinner and election of officers of the Scandinavian Medical Society of Chicago was held October 13. Dr. Alfred C. Cotton, president of the Illinois State Medical Society, was guest of honor. Dr. Andreas Klövstad was elected president, and Dr. William J. Anderson, secretary-treasurer.

Health League Formed.—The Chicago Health League was organized October 12, at the rooms of the Visiting Nurses' Association, with Dr. Sydney Kuh, president, and Miss Harriet Fulmer, secretary. The organization is composed of representatives from eighty different clubs, civic associations, and labor unions, and its object is the promotion of the general health of the city. Legislation for better sanitation and health regulation of factories and all places of employment will be demanded by the league.

INDIANA

New Medical Chapter.—A chapter of the Phi Chi Medical Fraternity has been established at the University of Indiana, Bloomington, under the name Alpha Mu.

Personal.—Dr. Chauncey W. Dowden, medical director of the West Baden Hotel, has returned from Europe.——Dr. Samuel M. Ried, Muncie, is recovering after being seriously ill at his home for several months.

Antituberculosis Camp Open During Winter.—The directors of the Antituberculosis Colony, Pottowatomie Park, South Bend, have decided to make the cottages habitable for cold weather, and to keep the camp open during the winter months.

Medicine Vendor Fined.—William Hope, Indianapolis, a vendor of nostrums and mineral water, has been fined for selling medicines without a license. The sentence was suspended on the promise of the defendant to leave the city at once.

Verdict for Physician.—A jury in the circuit court at Bluffton, on September 21, is said to have returned a verdict in favor of the defendant in the suit of Mrs. Cora Vore against Dr. James W. McKinney, in which damages of $5,000 were sought for alleged malpractice.

IDAHO

Home from Europe.—Dr. James L. Stewart, Boise, has returned after a three-months' trip abroad.

State Association Session.—The eighteenth annual meeting of the Idaho State Medical Association was held in Boise, October 6 and 7, under the presidency of Dr. John M. Taylor, Boise. The following officers were elected: president, Dr. John W. Givens, Orofino; vice-president, Dr. George O. A. Kellogg, Nampa; delegate to the American Medical Association, Dr. Ayer A. Higgs, Soldiers; alternate, Dr. C. L. Dutton, Meridian; Dr. George H. Coulthard, Idaho Falls, chief of the committee on public health, and Dr. William T. Drysdale, New Plymouth, Idaho member of the board of trustees of *Northwest Medicine*.

IOWA

Tuberculosis Census.—The State Board of Control on October 11, began taking a census of tuberculosis sufferers of the state. More than 3,500 letters were sent out to physicians of the state asking each to make a report to the board of cases in his community, the age of patients, stage of the disease, and whether or not health rules were being observed.

Personal.—Dr. Benjamin R. McAllister, assistant physician at the Cherokee State Hospital, has been appointed superintendent of the State Insane Hospital, Jamestown, N. D.——Dr. George Donahue, the new superintendent of the State Inebriate Hospital, Knoxville, assumed charge of the institution October 7.——Dr. Max E. Witte, superintendent of the Clarinda Insane Hospital, has been reappointed for a fourth term of four years by the board of control.——Dr. Willis E. Keith, Lost Nation, sailed for Europe October 1.——Dr. Thomas C. Gorman, Anamosa, began work as medical superintendent of the state reformatory October 2.——Dr. Harry E. Kirschner, superintendent of the Tuberculosis Sanatorium, Iowa City, has returned after three months abroad.

KENTUCKY

Personal.—The degree of master of arts has been conferred on Dr. Archibald H. Barkley, Lexington, by Transylvania University.——Dr. Bernard Asman, Louisville, has removed to Hot Springs, Ark.

Sanatorium Opened.—Waverly Hill Sanatorium for Persons Suffering from Tuberculosis was formally opened to the public October 6. The institution has been established at a cost of about $150,000 and is maintained jointly by the city of Louisville and county of Jefferson.

License to Practice Refused.—The governor, on September 30, refused to take action on the appeal of James S. Calvert of Caldwell county, who was refused a license by the State Board of Health, and who appealed from its decision. The governor, after reviewing the record, stated that he was not convinced that he should disapprove of the action of the board, as the record did not show that the appellant had been properly educated.

Poison Law Upheld.—The court of appeal has rendered a decision upholding the law regulating the sale of poisons. A druggist was indicted on information from the State Board of Pharmacy for selling morphin without a prescription from a physician, and without satisfying himself that the poison was to be used for legitimate purposes. The defendant's attorney contended that the words "retail" and "legitimate purposes" as used in section 2630 of the Kentucky Statutes were too indefinite and uncertain and that therefore the statute is invalid. The court holds that the statute is sufficiently specific and confirms the imposition of the fine.

LOUISIANA

New Maternity.—The New Orleans Lying-in-Clinic has been founded by Drs. Jacob W. Newman and Edith Loeber-Ballard. A building at Howard Avenue and Lee Circle has been leased for headquarters, and the clinic is open for consultation and general advice every day between ten and eleven, and at all hours for emergency calls.

The Cocain Evil.—The Orleans Parish grand jury has taken a strong stand regarding the cocain traffic in New Orleans. Fortified with facts from retail and wholesale druggists and physicians, the grand jury not only has recommended the continued rigid enforcement of the provisions against the illegal sale of cocain, but that the judges of inferior criminal courts sentence such law violators, when convicted, to a jail term instead of imposing a fine, and that a drastic state law be drafted increasing the penalties and limiting the quantities of cocain sold by wholesale dealers, and prohibiting and penalizing the importation by retailers and wholesalers of cocain into the state in larger quantities than are required for legitimate medicinal purposes. Fifteen cocain vendors have been arrested, and several have already been fined the maximum penalty allowed under the present law.

Personal.—Dr. George Dock has removed from New Orleans to 1906 Locust Street, St. Louis.——Dr. John B. Elliott, Jr., has been made chief of the department of medicine of Tulane University, vice Dr. George Dock, resigned, and Dr. J. Birney Guthrie has been made professor of clinical medicine.——Dr. Joseph A. Danna, New Orleans, has returned from Europe.——Dr. George S. Kreeger has been elected president of the Lake Charles Board of Health, vice Dr. Temple B. Smith, deceased.——Dr. Louis A. Murdock, St. Joseph, has been elected president of the Tensas Parish Board of Health.——Dr. R. Clyde Lynch, New Orleans, has been elected acting surgeon in charge of the ear, nose and throat department of the Eye, Ear, Nose and Throat Hospital. He has also been made professor of oto-rhino-laryngology in the postgraduate department of Tulane University, vice Dr. Gordon King, deceased.——Dr. James A. Anderson has been elected a member of the board of health of New Orleans, vice Dr. William H. Robin, resigned.

MARYLAND

Fixes Minimum Fee.—Anne Arundel County Medical Society, at its meeting October 11, adopted resolutions fixing the minimum fee for examination of insane persons at $10. The county has persistently refused to pay more than $5 for this class of examination.

Baltimore

Department Asks Increased Appropriation.—The health department has asked for an increased appropriation of $45,555 for the coming year.

Cottage at Sanatorium Dedicated.—The Mayer Cottage, a three-story building with accommodation for 20 patients, was dedicated at the Jewish Home for Consumptives in the suburbs of the city, October 16.

Grawitz in Baltimore.—Dr. Ernst Grawitz of the University of Berlin lectured at Johns Hopkins Hospital October 11 on "Diseases of the Blood." During his stay in Baltimore, Dr. Grawitz was the guest of Dr. Lewellys F. Barker.

Asks Appropriation for Hospital.—Dr. Warren P. Morrill, resident physician, Dr. Joseph W. Schereschewsky, U. S. P. H. and M.-H. Service, and others appeared before the Board of Estimates October 11 and urged an appropriation for an additional building and also for an administration building for Sydenham Hospital for Infectious Diseases, to cost $55,000.

Personal.—Dr. John W. Chambers, who has been suffering from septicemia due to an infected wound of the hand, is reported much improved.——Dr. Barrett C. Catlin, who was operated on in September, is reported to be convalescent.——Dr. Martin F. Sloan, resident physician at Eudowood Hospital for Tuberculosis, has gone to Johns Hopkins Hospital with suspected typhoid fever.

Lectures to Medical Students.—Prof. Alexander C. Abbott, of the University of Pennsylvania, will deliver two lectures at the University of Maryland, November 9 and 10, on "The Functions of the Municipality in Public Preventive Medicine" and "The Interdependence between the Laboratory and the Clinical Investigator."——Dr. Charles Wardell Stiles, U. S. P. H. and M.-H. Service, began a course of lectures at Johns Hopkins University October 12 on "Medical Zoology and Animal Parasites."

MICHIGAN

Sanitary Work of Railroad Company.—Dr. Arthur M. Hume, Owosso, chief surgeon of the Ann Arbor Railroad, announces that all passenger cars are fumigated each month; that individual drinking cups have been installed; that water tanks are being reconstructed so that ice does not come in contact with the water; that anti-spitting cards are being placed in coaches and stations, and that all smoking cars are being provided with cuspidors which are cleaned with an antiseptic solution at the end of each trip.

Accused Go Free.—In the case of A. W. Stewart, Mount Clemens, charged with illegal practice of medicine, which came up in circuit court, September 19, proceedings were dropped and an order secured for discontinuance of the suit on the declaration of the defendant that he had ceased practice and would qualify under the state law before resuming.——In the case of Mrs. Annie Daniels, living near Twining, charged with criminal abortion, causing death, on Miss Mary Lyle, the jury, on September 14, brought in a verdict of not guilty.

Hospital Staff Organized.—The House of Providence Hospital, Detroit, organized the following physicians into its staff October 10: radiographer, Dr. George C. Chene; obstetrics, Drs. Nathan Jenks, Charles H. Judd, Walter E. Welz, F. J. A. McDonnell, William H. Morley and W. E. Tyson; diseases of children, Drs. Guy L. Kiefer, Francis Duffield and Thomas B. Cooley; medicine, Drs. Edwin G. Knill, Hugo A. Freund, George A. Trizisky and Victor C. Vaughan, Jr.; eye and ear, Drs. Eugene Smith and Robert W. Gillman; nose and throat, Drs. Burt R. Shurly and Richard E. Mercer; skin, Drs. Henry R. Varney and R. A. C. Wollenberg; nervous diseases, Drs. Augustus W. Ives, Raymond L. Clark and David R. Clark; pathologist, Dr. George C. Chene; visiting staff, Drs. David H. O'Donnell, John V. White, Frank T. F. Stephenson, Eugene Robb, Isaac L. Polozker, Christopher Campbell and Edwin B. Forbes; consulting physicians, Drs. Edmund A. Chapoton, J. Henry Carstens, Theodore A. McGraw, Max Ballin, Charles Douglas and David Inglis; general surgery, Drs. Frank B. Walker and William A. Spitzley; associates, Drs. Allen W. McDonald, Robert T. Tapert, William J. Seymour, Claude M. Stafford and William E. Keane; gynecology, Drs. Howard W. Longyear and H. Wellington Yates; associates, Drs. Theodore A. McGraw, Jr., and Benjamin R. Schenck; proctology, Drs. James A. McVeigh and D. T. Kirschner; orthopedics, Drs. Daniel LaFerte and William E. Blodgett, and gastroenterology, Drs. James E. Davis and William M. Harvey.

MINNESOTA

Academy Election.—The Minnesota Academy of Medicine, at its annual meeting in Minneapolis, October 5, elected Dr. S. Marx White, Minneapolis, president; Dr. John L. Rothrock, St. Paul, vice-president, and Dr. Arthur W. Dunning, St. Paul, secretary-treasurer.

Sanitarians in Conference.—At the meeting of the Minnesota State Sanitary Conference in Minneapolis, October 6 and

7, Dr. Harry A. Tomlinson, superintendent of the State Hospital for the Insane, St. Peter, was elected president and J. T. Gerould, of the University of Minnesota, vice-president.

Auxiliary Organized.—A permanent organization of the Woman's Auxiliary of the Hennepin County Medical Society was effected at Minneapolis, October 10. Mrs. W. J. Burns was elected president; Mrs. J. W. Little, vice-president; Mrs. Frank J. Corbett, secretary, and Mrs. C. Nootnagle, treasurer.

Personal.—Dr. Thomas C. Clark, Stillwater, has gone to the district recently devastated by forest fires and is in charge of the hospital arrangements, and of the details for the care and relief of the sufferers.——Dr. George F. Beachler, Minneapolis, is reported to have been missing from his office and home since September 5.——Dr. Gustavus A. Newman, New London, has been appointed physician at the State Penitentiary, Stillwater, vice Dr. Burton J. Merrill, resigned.

New Dispensary Staff.—Dr. Henry C. Knight, Minneapolis, has been elected chief of the staff of the Wells Memorial Dispensary, and Dr. James S. Reynolds, secretary. The following department heads have been appointed: diseases of the stomach and intestines, Dr. Henry L. Knight; eye, ear, nose and throat, Drs. Howard McMorton and James S. Reynolds; surgery, Drs. William M. Chowning and James E. O'Donnell; internal medicine, Drs. Henry W. Cook and Kemlin J. Lee, and obstetrics and diseases of children, Dr. Charles B. Wright.

Combating Tuberculosis.—At the annual meeting of the Goodhue County Medical Society, held in Red Wing, October 4, the establishment of a county sanatorium for consumptives was earnestly favored. The building fund at present is only $2,000 but the society decided to raise $2,500 by subscription for the establishment of a suitable hospital.——The new plans for the new St. Louis County Tuberculosis Sanatorium are being prepared by architects of Saranac Lake, N. Y. The sanatorium will be located on an eighty-acre site at Midway and will include an administration building and several cottages.

State Society Meeting.—At the forty-second annual meeting of the Minnesota State Medical Association, held in Minneapolis, Oct. 6 and 7, the following officers were elected: president, Dr. James W. Robertson, Litchfield; vice-presidents, Drs. Frank W. Dimmitt, Red Wing, and Charles L. Schofield, Benson; secretary, Dr. Thomas McDavitt, St. Paul (reelected); treasurer, Dr. Richard J. Hill, Minneapolis; councilors, Dr. Charles E. Dampier, Crookston, First District; Dr. Joseph G. Millspaugh, Little Falls, Second District, and Dr. John L. Rothrock, St. Paul, Fifth District; delegate to the American Medical Association, Dr. George Douglas Head, Minneapolis, and alternate, Dr. Max P. Vander Horck, Minneapolis. The next meeting will be held in St. Paul on the first Thursday and Friday of October, 1911. The association adopted resolutions endorsing the Owen Bill for a national department of health, commending the work of Dr. Harvey W. Wiley, and condemning the use of benzoate of soda and like substances as food preservatives. The association decided to continue the *Journal of the Minnesota State Medical Association* as its official organ, with the understanding that the subtitle *Northwestern Lancet* should be removed from the cover.

MISSOURI

Silver Day for Hospital.—On Silver Day at Kansas City, more than $6,300 was collected for Mercy Hospital.

Colored Physicians Organize.—The negro practitioners of Missouri met in Sedalia October 8, and organized the Pan-Medical Association of Missouri, and elected the following officers: president, Dr. J. Mayo Harris, Sedalia; secretary, Dr. James F. Shannon, Kansas City, and treasurer, Dr. John R. A. Crossland, St. Joseph.

Personal.—Dr. D. B. McHenry, Princeton, has recently returned from Europe and has located in Oklahoma City.——Dr. D. Everett Standard, Springfield, fractured his arm in attempting to crank an automobile September 25.——Dr. T. J. McAllister has been elected treasurer of the St. Joseph Colored Antituberculosis Society.

St. Louis

Old Buildings Used for Consumptives.—The city quarantine hospital has been converted into a sanatorium for the treatment of tuberculosis and 74 patients are at present under treatment.

Violators of Milk Law Fined.—Fifty milkmen, charged with selling milk under the standard required by the city, or containing formaldehyd as a preservative, were arraigned in police court October 5, and 49 were either fined or ordered to pay costs.

NEW YORK

Clinical Lectures.—Dr. L. Duncan Bulkley will give the twelfth series of clinical lectures on diseases of the skin at the out-patient hall of the New York Skin and Cancer Hospital, Wednesday afternoons at 4:15, from November 2 to December 21. The medical profession is invited.

Typhoid Fever.—The epidemic of typhoid fever in Westchester County has not assumed the proportions recently reported, there being at present only about 25 cases under treatment. The epidemic has been traced to a small brook running through White Plains, and is not due to the public water supply. In view of the prevalence of typhoid throughout the state, Governor White has asked Dr. Eugene H. Porter, State Commissioner of Health, to investigate and report on the actual facts. It is intended to follow up this investigation with steps to prevent the further spread of the disease at threatened points.

PENNSYLVANIA

Personal.—Drs. Henry W. Sweigart, Lewistown, and William A. Tower, Mifflintown, were seriously injured, October 9, in an automobile wreck.——Drs. Lawrence Litchfield, Irwin J. Moyer, John W. Boyce, Thomas D. Davis, Percival J. Eaton, James H. McClelland and Walter F. Edmundson have been appointed by the Pittsburg Civil Service Commission examining board for medical examiners of the public schools.——Dr. Daniel D. Heilman, Northumberland, is reported to be critically ill with tetanus in a Philadelphia hospital.

The Status of Poliomyelitis.—Owing to the large number of cases of poliomyelitis in this state, a special meeting was held at the College of Physicians on October 14 to discuss the situation. Dr. George L. de Schweinitz presided and papers by the following were read: Dr. Paul A. Lewis, of the Rockefeller Institute; Dr. Allen J. Smith, professer of pathology in the University of Pennsylvania; Dr. Charles K. Mills, professor of nervous diseases in the University of Pennsylvania; Dr. Joseph S. Neff, director of the Department of Health, and State Health Commissioner Dixon. That anterior poliomyelitis flourishes in those parts of Pennsylvania which are liberally watered but have poor drainage, even in high altitude and that there have been very few cases over gravel formations where perfect drainage of the subsoil obtained, was the interesting point brought out in the paper by Dr. Dixon. Some of the most important charts were shown that have ever been tabulated by his department. These charts were made out in columns showing the geologic formations, water distribution and elevations. The number of cases of poliomyelitis that have appeared were put down on the charts in the districts in which they occurred. Elevation apparently has no influence on the disease. To these charts will be added the distribution of vegetable and insect life in order that it may be observed whether any peculiar insect or vegetable is found in places where the disease has been most prevalent. A total of 920 cases of poliomyelitis have been reported from 50 different counties in the state during the present epidemic. Of this number there were only two cases among the colored race. Males showed a greater tendency to contract the disease than females. The outbreak began about the end of May almost simultaneously in the Lehigh Valley, in Lancaster county, in Potter county and in Philadelphia. The epidemic reached its height the latter part of August. A total of 332 cases was reported during that month. It has tended to subside in October. Out of 920 cases, 600 occurred before the fifth year of age, 163 contracting the disease before the end of the eighteenth month of life. That the studies made by the department show that the disease is not badly contagious is indicated from the following statistics: In the rural districts out of 66 households having 2 school children but one contracted the disease. In 41 households with 3 children but one contracted the disease. In 37 with 4 children only one sickened. In 33 with 5 children one sickened. In 20, with 6 children, and in 8 households with more than 6 school children, only one contracted the disease. It will thus be seen what exhaustive study the State Health Commissioner and his assistants are making to find the cause of this disease. The work will be continued vigorously both in the field and in the laboratories.

Philadelphia

Society Elects.—The Philadelphia Pathological Society at its annual meeting, October 13, reelected Dr. David Riesman, president, and elected the following officers: vice-presidents, Drs. Aloysius O. J. Kelly, Allen J. Smith, Joseph Sailer and Hobart A. Hare; secretary, Dr. Edward H. Goodman; treas-

urer, Dr. Courtland Y. White; recorder, Dr. Frederick H. Klaer, and curator, Dr. Howard T. Karsner.

Personal.—Drs. Edward P. Davis and W. Reynolds Wilson have returned from Europe.——Dr. John A. McKenna, Lansdowne, sailed for Europe October 8.—Dr. Thomas C. Stellwagon has been appointed chief of the surgical clinic of Jefferson Medical College Hospital.——Drs. George J. Schwartz and Thomas J. Buchanan have resigned from the visiting surgical staff of the Jefferson Medical College Hospital.——Dr. James B. Walker is dangerously ill at his home.

WEST VIRGINIA

Petition for State Sanatorium.—The West Virginia Fraternal Association, in session at Weston, October 6, adopted resolutions asking the state legislature to establish a state tuberculosis sanatorium, and appointed a committee to circulate petitions and to bring the matter before the legislature at its coming session.

County Medical Society Election.—The first meeting for the season of the Ohio County Medical Society was held in Wheeling, September 12, and the following officers were elected: president, Dr. William S. Fulton; vice-president, Dr. D. Bigger Best; secretary, Dr. Randolph J. Hersey; treasurer, Dr. Reed McC. Baird; censors, Drs. James G. Walden, Albertus Nichols, and Samuel L. S. Sprague; delegates to the state association, Drs. Charles A. Wingerter, Edward L. Armbrecht, and David H. Taylor, and alternates, Drs. Andrew J. P. Wilson, James G. Walden, and John J. Osborn, all of Wheeling.

State Society Meeting.—The forty-third annual meeting of the West Virginia State Medical Association was held in Parkersburg, October 5-7, under the presidency of Dr. Thomas W. Moore, Huntington. The following officers were elected: president, Dr. Charles A. Wingerter, Wheeling; vice-presidents, Drs. John E. Cannaday, Charleston, Glenn Moorman, Petersburg, and George D. Jeffers, Parkersburg; secretary, Dr. Arthur P. Butt, Davis; treasurer, Dr. Hugh G. Nicholson, Charleston, and councilors, First District, Dr. Henry B. Linsz, Wheeling; Second District, Dr. W. Holmes Yeakley, Keyser; Third District, Dr. Peter A. Haley, Charleston; Fourth District, Dr. Walter S. Link, Parkersburg, and Fifth District, Dr. Samuel R. Holroyd, Athens. White Sulphur Springs was selected as the meeting place for 1911.

GENERAL NEWS

Personal.—Dr. William Colby Rucker, U. S. P. H. and M.-H. Service, formerly health commissioner of Milwaukee, has been detailed for duty in connection with the cholera situation. ——Dr. Charles E. Ruth and family, Ponce, Porto Rico, who have been spending the summer in northern Michigan, have returned home.

Railway Surgeons in Session.—The annual meeting of the Society of Surgeons of the St. Joseph and Grand Island Railway was held in St. Joseph, Mo., October 6. A clinic was held in St. Joseph Hospital in the morning, under the direction of the chief surgeon, Dr. Charles W. Wallace, St. Joseph. The following officers were elected: president, Dr. Barton Pitts, St. Joseph; vice-president, Dr. William M. Boone, Highland, Kan., and secretary, Dr. Charles H. Wallace, St. Joseph.

National Precautions Against Cholera.—At the request of Surgeon General Walter Wyman, every American village, town and city that recently has received, or until further notice receives, any Russian or Italian immigrant will be directed to isolate him if he develops any symptoms whatever of cholera. Of 15,000 steerage passengers who have landed in the last seven days, more than half have been from Italian ports or are Russians. The two cholera patients at Swinburne Island are improving.

Health of Canal Zone.—The report of the sanitary department of the Isthmian Canal Commission for August shows 55 deaths, 31 from disease and 24 from external causes, equivalent to an annual mortality per 1,000 of 13.04, an increase as compared with 1908 when the mortality was 11.39, and 1909 when the mortality was 10.28 per 1,000. No reason for this increase is assigned. No cases of yellow fever, small-pox or plague were brought to the isthmus or originated on it during the month.

Higher Preliminary Requirements in Colorado.—Dr. S. D. VanMeter, secretary, states that the Colorado State Board of Medical Examiners, at its October meeting, adopted a resolution providing that applicants for license to practice in Colorado, graduating after January 1, 1914, will be required to furnish satisfactory evidence that, before matriculation, they had completed two years' study without conditions in an accredited college of liberal arts. The requirement of one year of collegiate work, as previously announced, becomes effective January 1, 1912.

Infant Mortality.—The American Association for the Study and Prevention of Infant Mortality will hold its first annual meeting in Baltimore November 9-11. At the opening session, addresses will be made by Hon. Jules Jusserand, the French ambassador, and by Dr. William H. Welch. The second session will be devoted to philanthropic prevention of infant mortality; the third to municipal, state and federal prevention; the fourth to medical prevention, and the fifth to educational prevention. An exhibition will be held devoted to the milk work of departments of health, medical milk commissions, the influence of feeding on infant mortality, contagious diseases conveyed by milk, and specific causes of infant mortality.

Fraternity Meeting.—The Phi Beta Pi Medical Fraternity held its twelfth annual meeting in Philadelphia October 4-7, and elected the following officers: supreme archon, Dr. Albert H. Parks, Minneapolis; supreme vice-archon, Dr. Ned O. Lewis, Kansas City, Mo.; supreme secretary, Dr. George M. Kline, Ann Arbor, Mich.; supreme treasurer, Dr. Marcel J. de Mahy, New Orleans; supreme editor, Dr. George G. Zoehrlaut, Chicago; supreme eastern pretor, Dr. John W. Holmes, Philadelphia; supreme western pretor, Dr. David S. Long, Kansas City, Mo.; supreme southern pretor, Dr. Covert B. Cooper, New Orleans, and supreme northern pretor, Dr. David D. Todd, Ida Grove, Iowa. The fraternity will convene in Detroit next year.

Meetings to Come.—The twenty-sixth annual session of the New York and New England Association of Railway Surgeons will be held at Hotel Astor, Broadway and Forty-fourth street, New York City, November 3 and 4, under the presidency of Dr. Leroy M. Bingham, Burlington, Vt. Dr. John B. Deaver, Philadelphia, will deliver the address on surgery.——The twelfth annual meeting of the Ohio Valley Medical Association will be held in Evansville, November 9 and 10, under the presidency of Dr. Albert E. Sterne, Indianapolis. The subject of his address will be "The Question of Exercise."——The International Medical Society, consisting of representatives from Mexico, United States and foreign countries will meet in El Paso, Texas, October 27-29. Drs. von Ehrlich, Berlin, and Charles Wardell Stiles and Claude H. Lavinder of the U. S. P. H. and M.-H. Service, will deliver addresses.

Meeting of Southwestern Physicians.—The fifth annual meeting of the Medical Association of the Southwest was held in Wichita, Kan., October 11 and 12, under the presidency of Dr. George H. Moody, San Antonio, Texas. The following officers were elected: president, Dr. Middleton L. Perry, Parsons, Kan.; vice-presidents, Drs. John M. Griffin, Sulphur Springs, Ark.; William H. Stauffer, St. Louis; Everett S. Lain, Oklahoma City, Okla., and Wilmer L. Allison, Fort Worth, Texas, and secretary-treasurer, Dr. Fred H. Clark, El Reno, Okla (reelected), and executive committee, Drs. William A. Wood, Hubbard, Texas; Samuel S. Glasscock, Kansas City, Kan.; St. Cloud Cooper, Fort Smith, Ark., and Jefferson D. Griffith, Kansas City, Mo. Oklahoma City was selected as next meeting place. A state department of health, as suggested by the Owen bill, was endorsed by the association.

Millions for Medical Research.—At the meeting of the board of trustees of the Rockefeller Institute for Medical Research, in New York City, October 17, the occasion of the celebration of the opening of the new hospital described below, it was announced that Mr. Rockefeller had given $3,820,000 additional to the institute, thereby making his total gifts to this institution $8,240,000. The institute property has been placed absolutely in the hands of the board of trustees, consisting of John D. Rockefeller, Jr., Frederick T. Gates, William E. Welch, Starr J. Murphy and Dr. Simon Flexner. The function of the trustees is to hold and care for the property of the institute, including investment of endowment funds, and to hold the entire income under the control of the board of scientific directors, composed as follows: Dr. William H. Welch, Baltimore, president; Dr. L. Emmett Holt, New York City, secretary-treasurer; Dr. Simon Flexner, New York City, director of laboratories, and Drs. T. Mitchell Prudden, Christian A. Herter and Hermann M. Biggs, New York City, and Theobald Smith, Boston.

New Methods of Instruction at Syracuse.—A number of important changes made in the arrangement of courses at the College of Medicine of Syracuse University will be interesting to those who are trying to solve the problems of medical

education. These changes provide for the completion of the course in anatomy during the first year. This work will hereafter be in charge of Professor Henry W. Stiles, who comes to Syracuse University from Tulane University. He will be assisted by Dr. Robert H. Haskell, formerly of the University of Michigan. Physiologic chemistry is planned for the second semester of the first year and the first semester of the second year. As a prerequisite, a review course in general chemistry will be given during the first semester of the first year. Although the course in physiology is not to be changed during the present session, it is intended in the near future to provide for the completion of all work in this subject during the second year. The course in obstetrics has been arranged so that all the work in that subject may be completed during the third year. The rearrangement in surgery provides that all clinical work for the third and fourth year students will be taken in the forenoons. Provision has been made so that hereafter students in medicine will be assigned to cases in hospitals thereby having the opportunity for clinical investigation under the supervision of the attending staff. The students will also be given clinical laboratory work in a hospital, will act as clinical clerks and attend numerous section clinics. It is planned to correlate clinical work with that of the department of pathology and bacteriology. With this object in view an additional course has been provided in the bacteriologic examination of patients in hospitals and a second course in post-mortem examinations. Furthermore, a clinical and pathologic conference including one hour per week for the third and fourth year classes has been scheduled. At this conference it is intended that medical and surgical cases on which autopsies have been held during the preceding week are to be discussed. Clinical histories and records as well as the laboratory findings will be shown, the object being to present in a clear and concise manner all data having a bearing on a clinical diagnosis.

The New Hospital of the Rockefeller Institute.—The opening of the new hospital of the Rockefeller Institute for Medical Research in New York marks an advance in the organization and scope of this institution of noteworthy significance to practice as well as to research in medicine. The hospital is located on the grounds of the institute near the laboratory buildings but separate from them and is open on all sides to light and air. There is a separate building for the isolation and care of cases of communicable diseases. This building with its eight stories and an isolation pavilion, and with so complete an equipment, provides accommodations for only seventy. The reason for this is that the hospital was built not to add seventy beds to the facilities in New York for caring for the sick or injured, but to undertake a work which is not largely carried on in existing institutions. Their purpose is essentially philanthropic and educational, and only secondarily scientific. The primary purpose of the institution, however, is to advance the knowledge of clinical medicine, especially in the nature, diagnosis and treatment of disease. This can best be accomplished by the closest possible study of a very few patients, and the object sought can best be reached by attacking different medical problems singly and concentrating the entire energies of the institution on one or two or three of them. The problems to be taken up are not likely to be those of a rare or unusual nature, however interesting, but some of the most pressing problems of the day. Thus it is proposed to take up at first acute pneumonia and certain forms of heart disease, and of affections of disturbed metabolism, and infantile paralysis; the purpose being to determine by the most minute observations in the care and treatment of these few the best means of caring for the great majority of those who are suffering from these diseases. It has a medical and nursing staff which is relatively large in comparison with those of most other hospitals. One entire floor of the building is devoted to clinical laboratories, chemical, biologic, physiologic and photographic, for more accurate diagnosis and observation and the development of exact methods of treatment. The endeavor has been made to secure the best environment for persons under treatment—space and air and agreeable surroundings. The most ample provision has been made for the open-air treatment for patients suffering from both acute and chronic disease. There is a special diet kitchen in which all food can be prepared with scientific precision when this is required. There is a department of hydrotherapy and electricity. Another unique feature in the organization of the hospital is that the members of the medical staff will devote their entire time to the work of the hospital. They will receive salaries and will not be allowed to practice outside of the hospital or to receive any fees from patients. They will, therefore, have no other interest than the welfare of the patients under their care and the securing of such new knowledge of disease and its treatment as the exact observation and methods now made practicable promise to afford. The hospital contains few large wards, the largest holding but eight beds, but there are numerous single rooms for special cases where the best environment can be secured. Many of these single rooms have private baths connected with them. No fees are to be charged to any patients. The isolation pavilion provided for infectious diseases is entirely separate from the main hospital and has been planned in such a way that it will be possible to treat any form of infection with entire safety to the other occupants of the hospital. This makes it possible at any time for the institute to study any new phase of infectious disease which may appear in the city or in the community and greatly adds to the possibility of the usefulness of the institute.

Memorial to Finsen.—A monument to Finsen, the pioneer in scientific phototherapy, was recently unveiled at Copenhagen, erected by subscriptions from members of the profession, former patients and others at home and abroad. It stands on a prominent open corner with the large new public hospital in the background. The base of the monument is a huge, rough boulder, bearing the simple inscription, "To the Memory of N. R. Finsen, 1860-1904." It is surmounted by a group of three colossal figures representing Finsen standing, apparently invoking the light, and two female figures at his feet. Finsen's career reads like a romance; from the Faroe Islands, near Iceland, where he was born, to a Nobel prize and funeral with international honors, all in 43 years, most of them handicapped with severe heart disease!

CANADA

Seeks Reciprocity.—New Brunswick is making an effort to secure reciprocity with Great Britain, and has made application to the General Medical Council for this purpose. Nova Scotia and Prince Edward Island have already reciprocal arrangements with Great Britain.

Personal.—Drs. George A. Armstrong, and Frederick G. Finley, Montreal, and John A. McCollum and Samuel Cummings, Toronto, have gone abroad.——Dr. Charles Sheard, medical health officer of Toronto, has resigned.——The class of 1892, Toronto University, has elected Dr. Henry J. Way, Chicago, president.

McGill College Opens.—The opening lecture of the session of the McGill Medical Faculty was delivered October 3, by Dr. William Hunter, London, who spoke on "Antisepsis in Medicine." The new Medical building is in use for the first time. It contains the departments of anatomy, pathology, and bacteriology, a medical museum, and medical library.

Hospital Notes.—A new hospital is to be erected at New Westminster, B. C., at a cost of $200,000. The present hospital accommodates only forty-five patients, but as many as eighty-five have been in residence at one time.——The tuberculosis Dispensary at St. John, N. B., is to be opened Thursday afternoons for children, and parents are advised to take to the dispensary for examination all children who have been exposed to the disease.

Association Meetings.—The following officers were elected at the meeting of the Alberta Medical Association: president, Dr. L. S. Mackid, Calgary; vice-presidents, Drs. John Park, Edmonton, Walter S. Galbraith, Lethbridge, and Andrew W. Park, Cochrane, and secretary-treasurer, Dr. Thomas H. Whitelaw, Edmonton.——The College of Physicians and Surgeons of Quebec has elected the following officers: president, Dr. Louis P. Normand, Trois Rivières; vice-presidents, Drs. Art A. Simard, Quebec, Henry A. LaFleur, Montreal, and L. Arthur Lessard, Granby, and registrar, A. P. Gauvreau, Montreal.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, OCT. 8, 1910.

Coroner's Jury Comments on an Unsuccessful Operation

The verdict of the coroner's jury, usually composed of persons uninstructed on medical questions, is sometimes far from enlightened and may be harmful, as the following case shows. A man died three hours after an operation for intestinal obstruction at the Preston Infirmary. For some reason, the coroner thought that it was his duty to hold an inquest, although that is not necessary in cases of the kind. The medical evidence was to the effect that the man could not have lived more than a few hours if the operation had not

been performed, and that it gave him his only chance of life. The house surgeon stated that during the three years he had been at the infirmary there had been a dozen such cases which he had not reported to the coroner. If inquests were held in all such cases the result would be that physicians would not undertake the responsibility of performing operations and the odium attached to them. They had to consider their own reputation. However, the coroner rejoined that he failed to see why the operation should not be done "because there was a certain amount of publicity attached to it." Another surgeon gave evidence to the effect that he had operated in nine similar desperate cases in three years and that 5 of the patients were living today. "Whatever was said outside doctors must do their best." The verdict was that the man "died about three hours after an operation for obstruction of the bowels, and that his death was accelerated by the operation." One juryman had the sense to protest against the latter portion of the verdict, because it might frighten the public into not allowing their relatives to undergo operations. There does not seem to have been any evidence that life was shortened in this case by the operation and threfore the latter part of the verdict was speculative and unjustified.

Medical Literature for China

Professor Osler's "Principles and Practice of Medicine" has been translated into Chinese by Dr. P. B. Cousland, president of the China Medical Missionary Association, Shanghai. This undertaking has engaged Dr. Cousland for several years. The book is the only first-class work on medicine that has so far been translated into Chinese. Other translations are in progress. Dr. Cochrane, of Peking, is translating Heath's "Anatomy;" Dr. McAll, of Han-kau, Stengel's "Pathology;" Dr. Cormack, of Peking, Hutchinson and Rainey's "Clinical Methods;" and Dr. Neal, of Tsi-nan, Fuch's "Ophthalmology." A new and compact "Systematic Anatomy" is also passing through the press. An atlas of beautiful anatomic plates has just been printed for the China Medical Missionary Association by the Oxford Press at a cost apart from the letterpress of $2,500, a part of which has been contributed by the China Emergency Appeal Committee. As dissection of the human body is not yet allowed in China such plates are of great importance.

Yellow Fever in West Africa

Sir Robert Boyce, of the Liverpool School of Tropical Medicine, who has just returned from an expedition to West Africa, at the Liverpool Chamber of Commerce made an important report on yellow fever in that country. He states that in a short time we shall be in possession of facts which will throw great light on the diseases of the West African coast. He has come to the conclusion, as a result of his own observations, reading and inquiries, that yellow fever is endemic to the west coast of Africa and that for years it has been mistaken for malaria. In Sierra Leone, yellow fever has never been absent since 1806, and it always attacks those who have most recently arrived. It is even described by the natives as "the disease of the newcomers." But the mortality of Sierra Leone has greatly improved. One cause is the use of mosquito nets and greater care in living generally. It is the *Stegomyia calopus* which is the cause of the trouble. It has been said that this mosquito is difficult to tackle, but it is the easiest to get rid of. If the attacks on this mosquito were kept up, soon nothing more would be heard of yellow fever and the death-rate on the coast would go down with a run and many other diseases would disappear.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Oct. 7, 1910.

Twenty-Third Meeting of the French Surgical Association

The Association française de chirurgie held the opening session of its twenty-third meeting on October 3, under the presidency of Dr. H. Delagenière, surgeon of the hospitals of Le Mans and corresponding member of the Académie de médecine. None of our medical meetings is more interesting than this one. The proof is not only in the number of the members of the association, which increases each year, but in the number and high standing of the foreign surgeons who attend it. This year they were particularly numerous. Among them were Sir Victor Horsley of London, Professors Czerny of Heidelberg, Kocher of Berne, von Eiselsberg of Vienna, Tavel of Berne, Girard of Geneva, Ceci of Pisa, Jonnesco of Bucarest and Phocas of Athens.

Dr. Delagenière opened the meeting with an interesting paper on a very practical subject, "The Surgical Hour in Visceral Pathology or the Surgical Period in Certain Internal Diseases." For a long time, he said, surgeons have been accusing physicians of sending patients to them too late, to the loss of the patient and of surgery. Is not excessive specialization one of the causes of this condition? Specialization ought to exist only in practice, for the medical sciences form a whole whose complete knowledge is indispensable to every practitioner. The resources of surgery are incompletely and imperfectly known to most physicians. And yet, almost all visceral diseases present a period in their evolution during which surgical intervention may be tried with success, either for re-establishing the physical function of the organ or arresting the morbid process. This period passed, either the organ is destroyed from the physiologic point of view or the disease can no longer be arrested and the operation cannot cure the patient radically. Each visceral disease has its surgical hour, so to speak, and it is when this hour has struck that operation presents both the greatest simplicity and the greatest security.

Hostility to Ehrlich's "606"

Some French professors have been very skeptical in regard to the new remedy for syphilis and have gone so far as to carry the discussion, which ought to have remained on a purely scientific ground, into the lay papers. An interview which Professor Bouchard gave on the subject to a morning paper appeared under headings derisive of the remedy. It is extremely probable that Professor Bouchard did not say all that is attributed to him in the paper, and this seems to be well understood even in Germany, where the *Medizinische Klinik* of September 25 published a note blaming the Paris correspondent of a German lay paper for speaking unpleasantly of Bouchard. These squabbles are altogether out of place and it is to be regretted that Dr. Ehrlich himself did not hesitate to write to one of our lay journals, which naturally hastened to publish his letter.

Among us "606" has found a particularly bitter and violent opponent in Dr. Hallopeau, former physician of the Saint-Louis Hospital, who, after having published a criticism of "606" in a number of political journals, attacked it at the Académie de médecine October 4. According to him "606" does not fulfil the conditions of harmlessness and of constancy of effect which alone would justify the interest taken in it. There have been, he says, fourteen deaths from its use, two in Paris, besides cases of blindness.

These criticisms, circulated by the lay press, aroused active objections in the academy. Dr. Netter, *agrégé* professor at the Paris medical college, expressed surprise at hearing Hallopeau denounce systematically a drug which Ehrlich studied with so much care before putting it in general use. The deaths mentioned by Hallopeau could not be considered as due to the drug; as for the cases of blindness, Netter had heard of none. He believed that one should give credit to a man of such high standing and great scientific probity as Professor Ehrlich.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Sept. 29, 1910.

Personal

Professor Payr of Greifswald has been called to Königsberg as director of the surgical clinic to succeed Professor Lexer, who goes to Jena. Payr's successor is Prof. Fritz König of Altona, a son of the noted Berlin surgeon.

Ehrlich on His "606"

At the eighty-second session of German scientists and physicians, the Naturforscher Congress, just held at Königsberg, one meeting was devoted to the discussion of Ehrlich's new remedy and he made the following interesting statements with reference to "606."

The specific action of the remedy was recognized in animal experiments and is shown especially by the fact that on the application of a sufficient dose the spirochetes disappear in from 24 to 48 hours. If the time required is longer, either the dose was too small or the spirochetes in question are immune to arsenic. The second fact which has developed is that specific antibodies are produced. It appears that treatment with "606" furnishes an unusually favorable opportunity for the demonstration of these antibodies. The first important observation was that the milk of a mother who was nursing a syphilitic child and was herself treated and cured with "606," had a remarkably favorable action on the child. A similar result has been noticed in a large number of nursing women.

The arsenic content of the milk is extraordinarily small, so that it is evident that the milk must contain antibodies which are received into the stomach of the child and absorbed. From other sources it is known that if the serum of such patients is injected into syphilitic children the symptoms of the disease disappear. While it is evident that specific antibodies are formed, Ehrlich is of the opinion that the serum treatment alone is not sufficient for a positive cure. For if of a thousand spirochetes only a few survive, they are sufficient to prevent a complete cure. If children are injected with serum an extraordinarily prompt curative action is observed at first; the exanthemata very promptly disappear. But after 6 or 7 days other disturbances develop testifying that the antibodies were insufficient to destroy all the spirilla. It is therefore best to give such a child, soon after, a sufficient injection of "606" to kill the rest of the spirochetes.

The second specific action is on the Wassermann reaction which is certainly connected with the presence and growth of the spirilla. The very interesting observation has been made, that in certain affections a negative Wassermann reaction becomes at first positive under the influence of the injections. For instance, in chancres at an early period, the number of spirochetes is so small that they are not capable of producing a positive reaction. If now the previously negative reaction is at once converted into a positive one, evidence is furnished for the actual syphilitic nature of the disease. The importance of this reaction in the treatment with "606" cannot be sufficiently emphasized, he declared. If by the therapeutic action, only 100 out of 1,000,000 spirochetes survive, no reaction will occur, but every positive reaction is to be regarded as analogous to a relapse and is therefore an indication for the repetition of the treatment with "606." Such cases should be examined at sufficient intervals and kept under observation. It would be very desirable if a modification of the Wassermann reaction could be made so that the practitioner could apply this important test to his patients.

A third action which is very hard to explain consists in the fact that the remedy often works with wonderful rapidity. The statement has been made from many sources that patients, for instance, who had not been able for months to swallow any solid food on account of disease of the fauces or tonsils could do so immediately after an injection. This remarkable rapidity of action is not to be explained by anatomic changes but depends on the removal of the pain, which was due to the action of the products of the secretion of the spirochetes; "606" acts in this case as an antineuralgic. On the other hand, it has been occasionally observed that increased sensitiveness occurs in some patients similar to what has been observed after mercurial injections. The first observations in this line come from Italy where extraordinary caution was at first used and doses of from 0.025 to 0.05 gm. (½ to 1 grain) were employed. The spirochetes recovered themselves after a short time; they were not destroyed by the weak remedy but stimulated so that the result was a greater secretion of toxin. Ehrlich has always regarded the remedy as an arsenical and a dangerous remedy and has therefore insisted on the necessity of a thorough preliminary testing of it. No one can expect complete harmlessness in a remedy which is to kill parasites. The mortality as a result of the remedy depends exclusively on the constitution of the patient, a law which holds for all dangerous remedies, even for chloroform. Ehrlich has now reports of the use of "606" in 10,000 cases. The results have shown that "606" is not especially dangerous. In this large number of cases there is only one in which death immediately followed the administration of the remedy, and this was the case of a female patient whose disease, tertiary syphilis, must have eventually resulted fatally. In this case the injection was made with the acid solution and there was a certain shock which would be avoided with the newer preparation. All other fatalities, of which the number might reach a dozen, occurred in cases of severe nervous disease, tabes and the like, in which the prognosis at least was very doubtful. If in such desperate cases unfavorable results ensue, it must not be said that the remedy is dangerous. Such extremely dangerous experiments must be undertaken if one has the conviction that he can save the patients in that way. Ehrlich does not consider the remedy indicated in cases of severe paralysis, for even if a cure resulted the patients could not be expected to become useful members of human society. A second contraindication is furnished by diseases of the heart and blood vessels in which one must be very cautious. As to the technic, the alkaline solution which was first introduced by Alt and Iversen has the slight disadvantage of being somewhat painful while the neutral injection has the advantage of lessened painfulness. For that reason the neutral emulsion should be preferred in neurasthenic and alcoholic persons and in patients sensitive to pain. Probably in future a combination of both methods with the use of both intravenous and subcutaneous injections may be adopted. The dose depends on the nature of the disease. A general dosage cannot be given. In nervous affections 0.4 gm. (6 grains) should not be exceeded for these oversensitive individuals react very unpleasantly on the part of the heart and central nervous system. Moreover in these central nervous affections the number of spirochetes is very small and a smaller amount of the remedy is probably sufficient for their destruction. It has been established that from 16 to 20 per cent. of the paralytics have lost their Wassermann reaction. These patients have not regained the reaction in a period of two years and this fact gives a most hopeful outlook for the future. In general Ehrlich agrees with Neisser that one should try to give doses large enough to secure a cure by the first injection. In a relatively healthy person a dose as high as 0.8 to 1.0 gm. (12 to 15 grains) or even higher can be given without danger. Finally Ehrlich notes that the remedy is also active in other diseases. Among these the most prominent is frambesia which is very nearly related to syphilis, next chicken cholera and certain forms of malaria. The fact has been independently established from various sources that a single subcutaneous dose was sufficient for the removal of fever in malaria. Also in two small-pox cases the remedy had an apparently favorable effect.

Marriages

G. M. WYATT, M.D., to Miss Elam, both of Dewey, Okla., September 28.

HENRY B. KOLB, M.D., to Miss Mary Cookran, both of Baltimore, October 5.

ELVA C. MACER, M.D., to Miss Rena Rust, both of Evansville, Ind., October 5.

LEWIS E. MISSIMORE, M.D., to Mrs. Lucille Alexander, both of St. Louis, October 5.

HERBERT W. HEWITT, M.D., to Miss Sila M. Hovey, both of Detroit, October 1.

HARRY ISAAC WIEL, M D., to Miss Sarah Lilienthal, both of San Francisco, October 2.

CARL TILLMANNS, M.D., to Miss Lucy Bakehouse, both of Sigourney, Iowa, July 13.

CHARLES W. RILEY, M. D., Baltimore, to Miss Helen Cruikshank, at Baltimore, October 4.

JOHN CROCKETT EASTON, M.D., to Miss Mabel Prince, both of Springfield, Ohio, October 11.

SILAS MERCER MOORMAN, M.D., to Miss Frances Ditweiler, both of New York City, recently.

ROZELL MCGLATHERY, M.D., Oil City, La., to Miss Margery Frances Lloyd of Chicago, October 12.

CLARENCE LE R. COLE, M.D., U. S. Army, to Miss Hoff, at Whipple Barracks, Ariz., September 21.

PHILIP HENRY WEBER, M.D., Elmhurst, Cal., to Miss Ruby Hughes of San Francisco, recently.

JAMES A. BOND, M.D., Parkersburg, W. Va., to Miss Bertha George, at Glen Marcy, Md., October 1.

LEMUEL BYRD SHORT, M.D., East St. Louis, Ill., to Miss Josephine Hill of Fillmore, Ill., recently.

JAMES H. BOULTER, M.D., Detroit, to Miss Evaline Crawford of Denver, at Hamilton, Ont., October 12.

JOHN A. DUNCAN, M.D., Upham, N. D., to Miss Grace Margaret Kinghorn of Toronto, Ont., September 21.

HOLLAND TODD GROUND, M.D., Aberdeen, S. D., to Miss Martha Grace McDonnell of Chicago, October 15.

BERNARD HAMLIN GLENN, M.D., Fowlerville, Mich., to Miss Nellie Deborah Lansing of Howell, Mich., September 7.

FRED WARREN MCCAW, M.D., Mount Union, Iowa, to Miss Myra Russell Patterson of Winfield, Iowa, September 29.

WILLIAM HENRY CANTLE, M.D., Mamaroneck, N. Y., to Miss Mary Elizabeth Cullen of Middletown, Conn., September 30.

THOMAS P. GUILFOYLE, M.D., Cherry, Ill., to Miss Kathleen Helen Dwyer of Arlington, Ill., at Peoria, Ill., September 29.

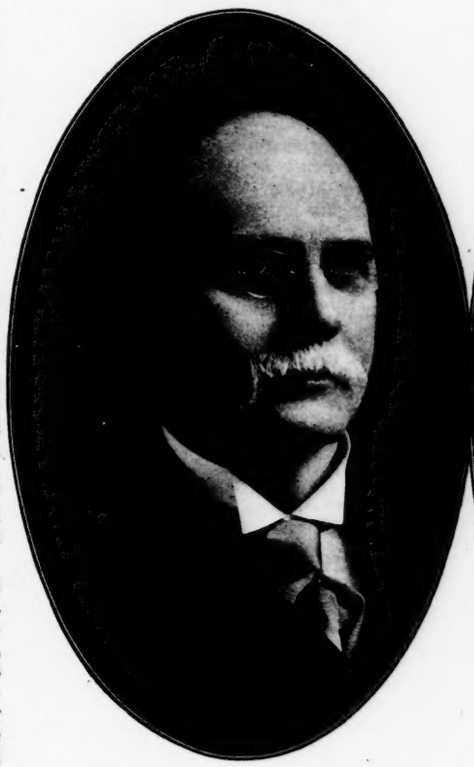
JOSEPH HOWARD HODGES, M.D., Harpers Ferry, W. Va., to Miss Edna Bell Hendricks, at Shenandoah Junction, W. Va., October 12.

Deaths

DeForest Willard, M.D. University of Pennsylvania, Philadelphia, 1867; died at his home in Lansdowne, Philadelphia, October 14, from double pneumonia complicating acute multiple neuritis, aged 64. He was a member, and in 1902 chairman, of the Section on Surgery of the American Medical Association; president of the American Orthopedic Association in 1890; of the Philadelphia County Medical Society in 1892, and of the American Surgical Association, and the Philadelphia Academy of Surgery in 1902, and a fellow of the Philadelphia College of Physicians; professor of orthopedic surgery in the University of Pennsylvania since 1889; surgeon to the Presbyterian and University hospitals; consulting surgeon to the Germantown, Jewish, Atlantic City and Phœnixville hospitals, and surgeon in chief of the Widener Training School for Crippled Children.

Dr. Willard was author of a text-book on "Artificial Anesthesia," published in 1891; and of a work on "Surgery of Childhood, Including Orthopedic Surgery," published in 1909; and numerous monographs on surgical and orthopedic subjects; acting assistant surgeon under the auspices of the United States Sanitary Commission at the Second Corps Base Hospital, City Point, and at the Fairgrounds Hospital, Petersburg, Va., and attending medical officer of the Centennial Exposition in 1876.

Dr. Willard was progressive. He was not only one of the leading orthopedists of the country but also a most notable surgeon. He was a man with hosts of friends and without an enemy.



DeForest Willard, 1846-1910

J. V. Shoemaker, 1858-1910

TWO PROMINENT PHILADELPHIANS

John Veitch Shoemaker, M.D. Jefferson Medical College, 1874; died at his home in Philadelphia, October 11, from acute nephritis, aged 52. He was a member of the American Medical Association and trustee from 1890 to 1893; American Academy of Medicine; Association of Military Surgeons of the United States; British Medical Association and London Medical Society; formerly secretary, vice-president and president of the American Medical Editors' Association and president of the American Therapeutic Association; demonstrator and lecturer on anatomy and lecturer on cutaneous affections in Jefferson Medical College from 1874 to 1886; professor of cutaneous diseases and materia medica and therapeutics since 1886 in the Medico-Chirurgical College, and president of the institution since 1890; senior physician to the Medico-Chirurgical Hospital; founder of the *Medical Bulletin* in 1879, and *Medical Register* in 1887; and editor of the *Medical Times and Register*.

He was surgeon-general of the State of Pennsylvania from 1898 to 1902; and during the Spanish-American War raised the necessary funds and presented to the State of Pennsylvania a fully-equipped hospital train for the transportation of its sick soldiers from Camp Alger, Va. He was commissioned first lieutenant, Medical Reserve Corps, U. S. Army, in 1908.

Dr. Shoemaker was a prolific contributor to the literature of dermatology, materia medica and therapeutics and served as president of the Board of Charities and Corrections of the City and County of Philadelphia since 1901.

Benjamin Franklin Dixon, M.D. Medical College of the State of South Carolina, Charleston, 1874; of Raleigh, N. C.; a veteran of the Civil War and major of the Second North Carolina Infantry, U. S. V., during the Spanish-American War; formerly superintendent of the Masonic Orphan Asylum, Oxford; later president of the Greensboro Female College, and since 1900, state auditor; died at Rex Hospital, Raleigh, North Carolina, September 26, from angina pectoris, aged 65.

T. Floyd Woodworth, M.D. Ohio Wesleyan University, Cleveland, 1869; formerly a member of the American Medical Association; a member of the Medical Society of the State of New York and president and secretary and treasurer of the Columbia County Medical Society; for several terms coroner of Columbia county; health officer of Kinderhook, and local United States pension examiner; local surgeon of the New York and New England and Albany and Hudson Railways; died recently at the Ann May Hospital, Spring Lake, N. J., from heart disease, aged 78.

Gustavus Lincoln Simmons, M.D. Harvard Medical School, Boston, 1856; a member of the American Medical Association; formerly physician of Sacramento county; president of the Medical Society of the State of California in 1893; secretary and president of the Sacramento Board of Education; a member of the local board of pension examiners; surgeon of the Fourth Infantry, N. G., Cal.; for more than twenty years a commissioner in lunacy and a member of the local board of health; died at his home, October 4, aged 78.

Samuel Dutton Gilbert, M.D. Yale University, New Haven, Conn., 1871; of New Haven, Conn.; a member of the American Medical Association; president of the Connecticut State Medical Society; attending physician to New Haven Hospital; died between Dover, England, and New York on board steamer *Lapland*, September 27, from pneumonia, aged 62. The New Haven Medical Association, at its meeting October 3, adopted suitable resolutions regarding the death of Dr. Gilbert and appointed honorary pallbearers.

Patrick Henry Jameson, M.D., Jefferson Medical College, 1849; a charter member of the Indiana State Medical Association; founder of the Indianapolis City Hospital; during the Civil War in charge of the Military Hospital, Indianapolis; a member of the city council from 1863 to 1869; a member of the board of trustees of the Indiana Hospital for the Insane from 1861 to 1868; physician to the Indiana Institute for Deaf and Dumb from 1861 to 1869; from 1869 to 1879 president of the boards in charge of the benevolent institutions of the state; for thirty years a trustee of Butler College; died at his home in Indianapolis, October 7, from senile debility, aged 86.

Temple B. Smith, M.D. Marion Sims College of Medicine, St. Louis, 1892; a member of the Louisiana State Medical Society; president of the Lake Charles Board of Health; local surgeon for the Southern Pacific and Kansas City Southern railways; died in St. Patrick's Sanitarium, Lake Charles, October 3, from the effects of a gunshot wound of the abdomen inflicted by his wife during a quarrel a week before, aged 46.

Charles Edwin Miles, M.D. Worcester (Mass.) Medical College, 1859; vice-president of the National Eclectic Medical Association; for several years chairman of the Massachusetts Board of Registration in Medicine; and assistant editor of the *Massachusetts Medical Journal;* a member of the Boston School Committee; died at his home in Roxbury, October 1, from pneumonia, aged 79.

George U. Runcie, M.D. Northwestern University Medical School, 1880; University of Louisville, 1890; a member of the Indiana State Medical Association; from 1889 to 1893 physician to the Indiana State Prison South, Jeffersonville; local surgeon to the Evansville and Terre Haute Railroad; died at his home in Poseyville, October 2, from cerebral hemorrhage, aged 52.

William W. Hamilton, M.D. Hospital College of Medicine, Louisville, 1879; of Meridian, Miss; a member of the American Medical Association; one of the founders, and secretary, and professor of obstetrics in the Mississippi Medical College, Meridian; health officer of Lauderdale county; local surgeon of the Southern Railway; died on a Southern Pacific train in Lafayette, La., October 8, from cerebral hemorrhage, aged 52.

Jacob Miller Hinson, M.D. Hahnemann Medical College, Philadelphia, 1886; of Brookline, Mass.; for many years ophthalmic surgeon to the Massachusetts Homeopathic Dispensary and Burrage Hospital; assistant in the Massachusetts Homeopathic Hospital; died suddenly in Saratoga, N. Y., October 4, from heart disease, aged 45.

Cornelius Gilman Trow, M.D. College of Physicians and Surgeons, New York City, 1872; of Sunderland and South Deerfield, Mass.; a member of the Massachusetts Medical Society; chairman of the school committee of Sunderland and trustee of the public library; died at his home in Sunderland, October 7, from laryngitis, aged 63.

George F. Cook, M.D. Medical College of Ohio, Cincinnati, 1872; a member of the Ohio State Medical Association and American Medico-Psychological Association; founder and physician-in-charge of the Oxford Retreat; president of the Oxford National Bank; died at his home, September 21, from chronic bronchitis, aged 64.

William Watson Gailey, M.D. Philadelphia College of Medicine and Surgery, 1863; of Ashland, Ill.; for many years a member of the Illinois State Medical Society; a medical cadet during the Civil War; died in Maplewood Sanitarium, Jacksonville, Ill., September 27, from uremia, following chronic nephritis, aged 68.

Frank Blair Olhausen, M.D. University College of Medicine, Richmond, 1898; a member of the Medical Society of Virginia; for several years local surgeon for the Baltimore and Ohio and Southern railways at Harrisonburg, Va.; died at his home in that city, October 8, from cirrhosis of the liver, aged 34.

Milo Wakely Scott, M.D. Rush Medical College, Chicago, 1877; for several years a practitioner of Grand Forks, N. D., and county physician and coroner; a member and treasurer of the first capitol commission which located the state capital at Bismarck; died at his home in Los Angeles, September 4.

Joseph Janney Hull, M.D. New York University, New York City, 1858; a member of the New York Pathologic Society; and for many years consulting surgeon to the Nursery and Children's Hospital; died at his home in New York City, August 26, from arteriosclerosis and myocarditis, aged 76.

Henry Jayne, M.D. University of Michigan, Ann Arbor, 1865; a veteran of the Civil War; mayor of Taylorville, Ill., from 1891 to 1893, and for four years postmaster of that city; died at his home, September 10, from nephritis, aged 73.

George A. E. Carey, M.D. Cincinnati College of Medicine and Surgery, 1864; assistant surgeon of the First Ohio Volunteer Heavy Artillery during the Civil War; died at his home in Indianapolis, October 11, from arteriosclerosis, aged 77.

Frank Horace Lower, M.D. Cleveland Medical College, 1894; of Cleveland; a member of the staff of the Huron Road Hospital; died at Lakeside Hospital, Cleveland, September 28, from general paresis, aged 42.

Pharmacology

[CONTRIBUTION FROM THE CHEMICAL LABORATORY OF THE AMERICAN MEDICAL ASSOCIATION]

PERFECTED OXYGENOR KING *

W. A. Puckner and L. E. Warren

A decade ago Dr. N. C. Morse of Eldora, Iowa, called attention[1] to three mechanical frauds which he had investigated and which were being exploited for the cure of disease. These instruments were known, respectively, as the "Electropoise," the "Oxydonor Victory" (Fig. 1), and the "Oxygenor King" (Fig. 2).

The "Electropoise" consisted of a metallic cylinder, called "Polizer," 3½ inches in length and weighing about 5 ounces, to which an uninsulated cord was attached. To the distal end of the cord a small disc was attached and by means of an elastic band and buckle the disc could be fastened to the wrist or ankle of the patient. On sawing into the "Polizer" it was found to be hollow and empty. The price of this instrument was $10.00.

The "Oxydonor Victory" resembled the "Electropoise" very closely. Its cylinder, called the "Vocor" was composed of brass, was 2⅝ inches in length and its weight was about 5 ounces. Inside the cylinder a stick of carbon, such as is used by electricians, was found sealed at either end by sealing wax. The price of this appliance was originally $35.00, but at the time of Dr. Morse's investigation it could be purchased for $10.00.

The "Oxygenor King," while similar in a general way to the other instruments, was somewhat more complex. It consisted of a brass cylinder 5½ inches in length and weighed 24 ounces from each end of which an insulated cord extended, one terminating in a copper disc and the other in a disc of zinc, the discs being intended to be fastened to the limbs of the patient. On cutting into the cylinder of the "Oxygenor King," it was found to be filled with a mixture of powdered charcoal and sulphur. The price of "Oxygenor King" was $25.00 net cash.

WHAT THE COURTS SAID

Nothing in the composition of any of these instruments could possibly generate the smallest quantity of oxygen, ozone or electricity. Other than their influence as "faith healers" Dr. Morse concluded that none of them could have any "more medical virtue than a copper wire attached to a stove lid or a tin can filled with brimstone and charcoal." Dr. Morse also called attention to the fact that Dr. Hercules Sanche, the promoter of "Oxydonor Victory," had attempted to invoke the power of the courts to prevent the sale of the "Oxygenor King" but that the United States courts had decided that his instrument was not of sufficient value to entitle it to the protection of a court of equity. The matter was in the courts for sometime and when the case was finally disposed of, THE JOURNAL commented on the matter editorially in part as follows:[2]

"The court stated that these and similar fakes can not have the indorsement of the courts when the pretended inventor can not make or refuses to make an explanation. The court admitted that reputable witnesses testified that when sick they used some of these devices, and that they were restored to health; but the court goes on to say that there is nothing to prove that this sequence of events is in the nature of cause and effect. He remarks: 'It would be just as reasonable for an Iowa farmer to say his barn was not destroyed by the last thunderstorm because there was a lightning rod on Mount Pisgah, as for a man to say that his restoration to health was brought about by the use of an Oxydonor or an Oxygenor.'"

THE OXYGENOR KING

The "Oxygenor" is now called the "Perfected Oxygenor King." One of these instruments was recently examined in

* This and similar fakes are commented on editorially in this issue.

1. THE JOURNAL A. M. A., Dec. 1, 1900, p. 1404.
2. THE JOURNAL A. M. A., Jan. 11, 1902, p. 336.

the Association Laboratory. In an advertising circular this apparatus is thus described:

The Perfected Oxygenor King is a scientifically constructed instrument capable of curing all curable diseases without drugs, employing only the oxygen of the air.

It consists of a metal cylinder, especially charged with a delicately adjusted but permanent combination of rare and costly metals, chemical agents and conductive elements, and called a generator.

From the description given in the circular it appears that the "generator" is a small nickel-plated cylinder, closed at each end by means of a screw cap. To each of the two caps an insulated wire several feet in length is fastened, terminating in a metallic plate—one a zinc plate to be fastened to the ankle of the patient, the other a copper plate for the wrist. A third wire called a "force-controlling cord" joins the two others at a short distance from the cylinder and may be attached to the cylinder at one of the several points by means of a screw connection.

HOW IT IS SUPPOSED TO WORK

The method of applying this instrument is simplicity itself. There is but one requirement, namely, that the generator be placed in a temperature thirty to sixty degrees below that of the body. This is done by placing it on a window-sill, on the floor, or in a basin of cool water.

The patient then attaches the green cord to his ankle, the red cord to his wrist, and sits down, reclines on a couch or retires to bed.

The instrument produces its curative effects without further notice or effort on the part of the patient, and usually without any sensation of any kind whatever except the diffused, pleasurable feeling that comes with an increase in bodily vitality.

Under certain circumstances, however, the patient will break out into a gentle perspiration, and for this reason he should be careful to avoid a draught.

It is possible, also, that with the force-controlling cord at "strong" he may experience some inconvenience. This can be remedied by attaching it to the weak connection, or "*G*" post.

According to one portion of the circular the "instrument has been designed "to control and adapt. . . . the force governing change," whatever that may be, and its curative properties are claimed to reside in this power. In another part of the circular the reader is led to believe that disease is caused by imperfect power to absorb ozone through the skin (!) and that the use of the "Perfected Oxygenor King" restores this deficiency, thereby enabling the organism to regain its normality. A list comprising the names of 121 diseases which the "Perfected Oxygenor King" is claimed to cure is given in the circular. Among these are epilepsy, heart disease, locomotor ataxia, scarlet fever, yellow fever, and pneumonia.

TESTIMONIALS—AS USUAL

We can furnish proof that its range of cures is from Headache to Paralysis, from Blood Poison to Change of Life, from Chickenpox to Varicose Veins, from Colic to Bright's Disease, from Malaria to Dyspepsia. In fact, practically the entire list of prevalent ailments is embraced in the record of cures.

In contrast to the above the following statements are also found in the circular:

One of the most noteworthy features of the Oxygenor treatment is that the patient cannot possibly be injured or acquire a "habit" by its use. It is not only simple, durable . . . and manageable even by a child, but innocent . . . It cannot injure or distress even the most delicate infant.

While the circular advertising the "Perfected Oxygenor King" is on the whole, a jumble of distorted facts, meaningless phrases and baseless assertions it still seemed worth while in view of the absurd claims made to examine the contents of one of the instruments.

WHAT IT CONTAINS

The material examined (taken from the "generator") was a dull, bluish-green, odorless powder. It was made up of irregular sized particles, ranging from coarse to fine. Qualitative tests demonstrated the presence of sulphur in the free state and of sand, both in considerable quantities. Small quantities of lead carbonate (white lead), free carbon (charcoal), a few particles of brass, and traces of iron were also present.

Quantitative examination indicated[3] that the composition of the material is essentially as follows:

	Per cent.		Per cent.
Sulphur	66.85	Moisture	0.12
Sand	29.82	Brass	0.19
Lead carbonate	1.64	Iron	trace
Charcoal	0.90		
Total			99.52

Figure 1

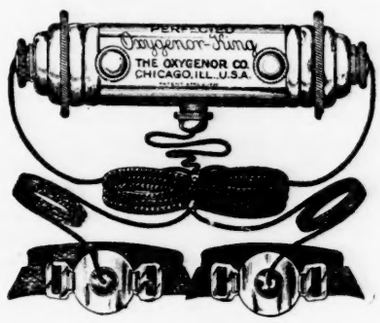


Figure 2

Figure 3

Fig. 1.—This depicts the piece of metal tubing "invented" by Hercules Sanche and named the "Oxydonor." The claim was made that "it causes the human organism to thirst for and absorb the oxygen of the air." It was advertised to "quickly and infallibly cure" a list of diseases ranging from "headache" to "hydrophobia" and from "twitchings" to "tetanus." This fake sold for from $10 to $35.

Fig. 2.—The "Oxygenor" is an elaboration of the "Oxydonor" fake. It, also, is supposed to "oxygenate" the simpletons who use it. Twenty-five dollars ($25.00) is asked for this piece of metal pipe filled with sand and sulphur.

Fig. 3.—The "Oxygenator" is the latest imitation of Sanche's original fake. It is just as worthless as the others and the claims made for it are even more viciously false. Twenty-five dollars ($25.00) and thirty-five dollars ($35.00) are asked for it.

The examination shows that the "rare and costly metals" consist of none more expensive than copper, lead or zinc, and that the other "chemical agents" (which comprise 97 per cent. of the whole) consist of sulphur and sand in the proportion of 2 to 1.

An examination of the cylinder from which the sulphur-sand mixture was taken reveals a curious situation. While all of the wires connected with the instrument are carefully insulated these wires and the screw posts are all attached to the surface of the brass cylinder without insulation from each other. The cylinder then, with its complex of three screw posts and "force-controlling cord," amounts to nothing more than an enlargement in a conductor. In effect it is as though insulated wires were soldered on opposite sides of a tin pail or, to use Dr. Morse's illustration, on opposite sides of a stove lid.

The examination of the "Perfected Oxygenor King" shows that it could not possibly generate the smallest quantity of oxygen or ozone and that it could not produce or induce any electric or magnetic phenomena whatever. Despite the emphatic statements of the exploiters (in the advertising circular) to the contrary the only possible therapeutic effects are those easily referable to the element of suggestion.

3. The details of the analysis will be published in the annual report of the Chemical Laboratory.

Correspondence

Typhoid Fever in Detroit

To the Editor:—The article in THE JOURNAL, October 8, on our water-supply, coming from the chief organ of the physicians of the United States, demands attention. From such an authority one would expect the most careful consideration and conclusions drawn, not from analogy or hypothesis but from scientific examinations of the water, its source and surroundings and the vital statistics affected by its supply. In other words, it is essential to make a careful and thorough "sanitary survey."

May I be permitted to doubt the thoroughness with which this has been accomplished by the commissioner of THE JOURNAL? The general tenor of his article is a condemnation of Detroit's water-supply and an intimation that we are in immediate danger of a typhoid epidemic. The belief in this menace to our health is not based on the health of the city, the results of a chemical and bacteriologic examination of the water, or positive evidence that there is danger of pollution.

The United States census bureau of statistics has just reported thirty-four large cities with a general death-rate of 15 per thousand, and well near the top comes Detroit with but 14. It is an accepted fact that an impure water-supply is one of the chief factors in determining mortality. Though it may not contain a specific disease germ, an impure water lowers vitality and renders consumers more liable to disease.

In the article referred to, the commissioner fails to mention any chemical examination made by him of the water, but states that the results of the local examinations "in general appear to be satisfactory." In other words, he indorses local analyses, which have invariably demonstrated the purity of our supply. It is fair to presume that his chemical examinations served to confirm our reports, or the contrary would assuredly have been proclaimed. Bacterial examinations he says "do not afford any marked evidence of contamination at the time the samples were collected. On the other hand, their generally negative character does not necessarily imply that the water is at all times and all conditions safe."

Here again he indorses the numerous examinations made by the local board of health and implies that it may be possible that at times when the examinations are not being made the supply may be contaminated. The bare possibility may be granted, but if a present contamination is not detected in a long series of examinations extending over a number of years, does it not seem worse than sensational to startle and alarm a large city with a hypothetical possibility?

As to danger of pollution in future: it is admitted that Conner's Creek furnishes nearly the only menace to the water-supply, and that the exit of this creek is opposite although removed nearly three-quarters of a mile (3,700 feet) from the intake pipe; a deep and moving stream (three miles an hour) separates the two points. It is clearly impossible for a sluggish creek to project its contents through a huge volume of quickly moving water to our source of supply. The extension of the city takes in Conner's Creek, and the projected sewerage will soon remove even this assumed danger.

To confirm his opinion of the danger of an epidemic somewhere in the future, the commissioner gives several tables of vital statistics among which is that of the average death-rates per thousand population by five-year periods since 1886 as follows:

1886-9	4.52	1900-4	1.74
1890-4	4.35	1905-9	2.05
1895-9	1.91		

Twenty-five years ago (five-year period) we had more than double the deaths we have at present. The same is true of the next five-year period twenty years ago. This tremendous decrease in mortality assuredly points to anything rather than a gradual increase of contamination of our water-supply, the result of "Detroit's increased population." Nor does it seem to confirm the commissioner's statement that "if present conditions are allowed to govern Detroit's water-supply a much more serious outbreak of typhoid is but a question of time."

Assuming that the deaths from typhoid in Detroit are due to water contamination, the decidedly lessened mortality would seem to indicate an improvement in watershed sanitation.

I agree with the commissioner that a thorough, intensive and exhaustive examination of the whole situation, similar to that carried out in Washington and Pittsburg, should be undertaken to settle once and for all this vital question and to allay public apprehension created by these frequent attacks on the purity of our water-supply.

JOHN E. CLARK, M.D., Detroit.

[COMMENT: Dr. Clark says he has offered the above reply to the Detroit newspapers. One of these, the *Free Press*, states that Dr. Clark "has written a letter to the editors of the magazine which will make interesting reading for them and for the medical fraternity of the country."

It ought not to be necessary to state that in publishing this study of the water-supply of Detroit and the typhoid situation THE JOURNAL did not intend "to startle and alarm a large city with a hypothetical possibility" in a way "worse than sensational;" but the investigation, as in the case of Milwaukee, was an incident in the thorough study which THE JOURNAL is making of typhoid conditions in the cities of the United States. Municipal water-supplies and sewage disposal present serious problems for the immediate future; and the prevalence of typhoid fever is a pretty good indication that conditions in any city are not what they should be.

With reference to the particular situation in the city of Detroit, Dr. Clark ignores the chief facts and misinterprets the tenor of the article in question. The facts are briefly these: One extensive epidemic of typhoid fever in Detroit has been definitely traced to the public water-supply; the source of supply is at present as much if not more exposed to contamination than it was when this epidemic occurred; for fifteen years the typhoid fever rate in Detroit has shown no diminution. These facts have not been and cannot be questioned. There is nothing novel or sensational about them. It is generally recognized among sanitarians that Detroit's water-supply is not what it should be. Hazen, for example ("Clean Water and How to Get It," p. 29), says: "Detroit is sixty miles below the outlet of Lake Huron, and in that distance there is opportunity for much pollution. This pollution comes both from the drainage of the considerable area reaching the river in this distance and from the discharge of sewage from the cities directly upon its banks. And this pollution by sewage is an important matter even with a dilution as great as that in the Detroit River." The statement that in some years Detroit has had a lower death-rate than some other cities is beside the point. If other American cities have a higher typhoid rate than they should, that is no reason why Detroit citizens should clamor for the same privilege. The *tu quoque* argument is nowhere more out of place than in sanitary matters. Would Dr. Clark maintain (1) that no sewage ever finds its way into the Detroit water-intake; (2) that there is at no time more typhoid in Detroit than would be expected in a city with a pure water-supply?

We would suggest to the Detroit newspapers, and to those officials who are supposed to represent the people as regards health matters, that it is better to know the facts and act on them, than ostrich-like, to refuse to see danger and to say there is none. See editorial comment, page 1477.—ED.]

A Restricted Materia Medica List

To the Editor:—The action of the National Confederation of State Medical Examining and Licensing Boards in advising the restriction of materia medica examinations to a comparatively small number of drugs is to be highly commended. It is certainly better to know one hundred drugs well than to know one thousand badly. You are of course right in your assumption that the list will hardly please everybody. I cannot truthfully say that it pleases me absolutely; for in my opinion it contains some drugs which in a restricted

list might as well be omitted, and it does not contain some drugs which are of sufficient importance to be contained even in a select list. But this is not the point of this letter. The point is a mild criticism of the classification of the drugs. Emanating from such a high body greater care should have been taken in classifying the drugs properly. Or perhaps it would have been better to give them simply in alphabetic order. For instance, I cannot see why aqua hydrogenii dioxidi, oleum santali, aloe and aloinum should be classed among local irritants (THE JOURNAL, Oct. 8, 1910, p. 1302). One is an antiseptic, another is a diuretic and antiblennorrhagic (demulcent in character) and the last two are catharties; to bunch them all together as local irritants is in my opinion rather unscientific. Nor is it right to class oleum morrhuæ and pepsinum among the protectives and emollients. I am not aware that carbon monoxid is a drug, official in any pharmacopeia, but still it is classified twice, as a hydrocarbon narcotic (hydrocarbon without any hydrogen!) and among "sundry." To classify potassium permanganate as a saline is not quite right, but to do so with saccharum lactis is rather ludicrous.

WILLIAM J. ROBINSON, M.D., New York.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

ARSENO-BENZOL—"606"—ARSEN-PHENOL-AMIN

To the Editor:—Where can I learn more about the Ehrlich-Hata remedy for syphilis? A. D. G.

ANSWER.—The above is a sample of the frequent inquiries that are received in this office. THE JOURNAL has endeavored to keep its readers informed on every phase of this subject, as soon as arsenphenol-amin seemed to be a practical addition to our therapy of syphilis, but, naturally these abstracts and editorials made no particular impression on many of our readers; now that the importance of the remedy is more apparent to them, however, they seek for additional information and write to us without looking back over the previous issues of THE JOURNAL. For their benefit, we give below the issues of THE JOURNAL in which the principal references have appeared. August 13, September 10 and October 8 and 22 are the most important issues.

THE JOURNAL has published the following original articles and editorials on this subject:

Nichols, H. J.: Preliminary Note on Action of Ehrlich's Substance "606" on *Spirochæta pertenuis* in Animals, THE JOURNAL, July 16, p. 216.

Murphy, J. B.: Arsenical Treatment of Syphilis, THE JOURNAL, September 24, p. 1113.

Nichols, H. J., and Fordyce, J. A.: Treatment of Syphilis with Ehrlich's "606," THE JOURNAL, October 1, p. 1171.

Corbus, B. C.: The Value of Ehrlich's New Discovery; A Preliminary Report from Personal Observation, THE JOURNAL, October 22, p. 1470.

Ehrlich's New Remedy for Syphilis, editorial, THE JOURNAL, August 13, p. 601.

Organic Arsenic Preparations—Ehrlich's "606," Editorial, THE JOURNAL, September 10, p. 949.

Ehrlich's Syphilis Remedy Not Yet on the Market, editorial, THE JOURNAL, September 10, p. 951.

"606"—Arseno-Phenol-Amin, editorial, THE JOURNAL, October 1, p. 1204.

The following articles have been abstracted in THE JOURNAL:

Wechselmann, W.: *Berl. klin. Wchnschr.*, July 4; abstracted in THE JOURNAL, August 13, p. 617. *New York Med. Jour.*, September 3; abstracted in THE JOURNAL, September 17, p. 1051.

Neisser, A.: *Deutsch. med. Wchnschr.*, June 30; abstracted in Berlin Letter in THE JOURNAL, July 23, p. 326.

Schreiber, E., and Hoppe, J.: *Münch. med. Wchnschr.*, July 5; abstracted in THE JOURNAL, August 13, p. 617.

Loeb, H.: *Münch. med. Wchnschr.*, July 26; abstracted in THE JOURNAL, August 13, p. 617.

Treupel, G.: *Deutsch. med. Wchnschr.*, July 28; abstracted in THE JOURNAL, August 13, p. 617.

Fischer, P., and Hoppe, J.: *Münch. med. Wchnschr.*, July 19; abstracted in THE JOURNAL, August 13, p. 617.

Ehrlich, P.: *Wien. klin. Wchnschr.*, August 4; abstracted in THE JOURNAL, September 10, p. 976. *Münch. med. Wchnschr.*, August 30; abstracted in THE JOURNAL, October 8, p. 1331.

Bohac, K., and Sobotka, P.: *Wien. klin. Wchnschr.*, July 28; abstracted in THE JOURNAL, September 3, p. 898. *Wien. klin. Wchnschr.*, August 4; abstracted in THE JOURNAL, September 10, p. 976. *Wien. klin. Wchnschr.*, August 25; abstracted in THE JOURNAL, October 1, p. 1239.

Herxheimer, K., and Schonnefeld, B.: *Medizinische Klinik*, September 4; abstracted in THE JOURNAL, October 8, p. 1331.

Spiethoff, B.: *Münch. med. Wchnschr.*, August 30; abstracted in THE JOURNAL, October 8, p. 1331.

Duhot, R.: Ibid.

Martin, A. P.: *Siglo med.*, September 10; abstracted in THE JOURNAL, October 1, p. 1209.

Braendle and Clingstein: *Med. Klin.*, August 21; abstracted in THE JOURNAL, September 24, p. 1153.

Iversen, J.: *Münch. med. Wchnschr.*, August 16; abstracted in THE JOURNAL, September 24, p. 1154.

Taege, K.: Ibid.

McDonagh, J. E. R.: *Lancet*, September 3; abstracted in THE JOURNAL, October 1, p. 1234.

Hoffmann, E.: *Med. Klin.*, August 14; abstracted in THE JOURNAL, September 17, p. 1062.

Pick, W.: *Wien. klin. Wchnschr.*, August 18; abstracted in THE JOURNAL, September 24, p. 1153.

Heubner, W.: *Therap. Monats.*, August; abstracted in THE JOURNAL, September 24, p. 1155.

Isaac, H.: *Berl. klin. Wchnschr.*, August 15; abstracted in THE JOURNAL, October 1, p. 1236.

Michaelis, L.: Ibid.

Junkermann, K.: *Med. Klin.*, August 28; abstracted in THE JOURNAL, October 1, p. 1237.

Fraenkel, C., and Grouven, C.: *Münch. med. Wchnschr.*, August 23; abstracted in THE JOURNAL, October 1, p. 1238.

Kromayer, E.: *Berl. klin. Wchnschr.*, August 22; abstracted in THE JOURNAL, October 8, p. 1329.

In addition THE JOURNAL'S foreign correspondents have reported from Paris, Berlin, Budapest and Vienna the results obtained with this remedy (THE JOURNAL, August 13, pp. 609 and 610; August 27, p. 791; October 22, p. 1483, etc.).

A letter from Dr. B. C. Corbus in THE JOURNAL, October 8, describes a visit to Ehrlich and his method of administering this remedy, and his article in this issue (October 22) gives a careful description of the Lesser technic, which Corbus thinks is the best.

The Public Service

Medical Department, U. S. Army

Changes for the week ended Oct. 15, 1910.

Bowman, M. H., M.R.C., granted leave of absence for 2 months and 24 days, to take effect about October 15.

Slater, Ernest F., M.R.C., par. 27, special orders No. 224, Sept. 24, 1910, W. D., announcing his honorable discharge from the service of the United States on Oct. 13, 1910, is suspended for the present.

Voorhies, Hugh G., dental surgeon, granted leave of absence for 1 month, to take effect about October 24.

Heflebower, Roy C., lt., will proceed to Fort Totten, N. Y., about October 19, for temporary duty, during the absence of Major Charles Willcox.

Strong, Francis X.; Carter, Henry P., and Gantt, Robert H., M.R.C., ordered to active duty in the service of the United States, and to the Army Medical School for a course of instruction.

Ragan, Charles A., captain, ordered to the Walter Reed General Hospital, District of Columbia, for observation and treatment.

Williamson, L. P., lt., ordered to Fort D. A. Russell, Wyo., for duty.

Roberts, William M., major, leave of absence granted in S. O. 140, June 16, 1910, extended one month.

Straub, Paul F., major, granted leave of absence for 1 month and 15 days, about November 1.

Eastman, William R., captain, granted leave of absence to include Nov. 5, 1910, on account of sickness.

Wiggin, D. C., M.R.C., resignation accepted, to take effect Nov. 1, 1910.

Moncrief, William H., captain, granted leave of absence for 1 month, with permission to visit China and Japan.

Medical Corps, U. S. Navy

Changes for the week ended Oct. 15, 1910.

Wise, J. C., medical director, transferred to the retired list from Oct. 7, 1910.

May, H. A., passed asst.-surgeon, detached from the naval hospital, Mare Island, Cal., and ordered to the bureau of medicine and surgery, Navy Department, temporarily.

Morris, L., surgeon, detached from the *Georgia* and directed to await orders.

Howard, J. V.: Omelvena, J. G.; Halsey, W. H.; Eaton, W. E.; Jacoby, A. L.; Pratt, L. L., and Halton, E. P., asst-surgeons, commissioned asst.-surgeons from Oct. 1, 1910.

Stuart, D. D. V., Jr., asst.-surgeon, commissioned asst-surgeon from Oct. 5, 1910.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

UNQUALIFIED DOCTORS VS. UNQUALIFIED LAWYERS

The newspapers are showing a marked tendency toward a broader view of the relations of the medical profession to the public. This tendency is increasing and has been frequently commented on. In a recent number of the Denver *Times*, the editorial writer gives a sudden and somewhat unexpected turn to the efforts which are evidently being made in Denver to enlist support for the National League of Medical Freedom. No better method could be devised for exposing the specious nature of the claims made by this organization.

Why, as the *Times* pertinently inquires, do we not have a National League for Legal Freedom? One might also ask why do we not have a national league to free us from the persecutions of licensed engineers and pilots, or from any of the other safeguards and protections which civilization has thrown around the life and health of the individual? If the citizen is to be allowed to spread typhoid fever, diphtheria or tuberculosis among his acquaintances and associates, if any man who claims to be a prophet of a new sect or cult is to be allowed to treat the sick, why should not any man who feels called on to do so, be allowed to practice law before the courts, to run an engine, or to steer a steamboat? If we are to have "medical freedom," why should we not have freedom of every other kind such as is enjoyed by the savage who recognizes no restraints either for his own good or that of others? With these considerations in mind, the extracts from the *Times* editorial are especially interesting:

"Why should not the Hon. Charles Spalding Thomas and his friends of the 'Medical Freedom League' expand their efforts in behalf of professional incompetency by including in their latest movement the emancipation of the people from the impositions of qualified, legal practitioners. Is not this city, is not every city crowded already with confident citizens who, though they know not Coke, nor Blackstone, nor Chitty, are yet ready to 'give an opinion' on the abstrusest of legal problems, and who will give you that opinion free and without the asking? Why should it not be the inalienable right of every citizen to 'practice law' without the tedious botheration of first studying its principles? . . . Why shouldn't there be osteopathic lawyers; and absent-treatment lawyers; and eclectic lawyers; and fasting-cure lawyers; and lawyers who are not lawyers? This lawyers' trust opens a new and enticing field for the energies of patriotism, the enthusiasm of folly and the sweets of advertisement; and we confess astonishment that Mr. Thomas—who surely knows more of law than he knows of medicine—has not seized the occasion sooner. To be an honorary vice-president of a 'League of Medical Freedom' is an empty honor because there are so many of them already; to be president of the 'League of Legal Liberty' would be a distinction that a man could hold alone and uncoveted."

After paying a truly beautiful tribute to the old-fashioned family doctor, the editorial continues:

"We are discussing this question of physician and patient at some length to-day because it is essentially a 'domestic' theme. It concerns in an intimate way our common lives and well-being. If the law permits a man to call himself a doctor of medicine who is not a doctor of medicine—learned in medicine—the law is permitting a fraud, and a hazardous fraud, on the public. If the law permits a man to practice surgery who has no sound knowledge of that science, the law is abasing itself before a counterfeit. We confess to a secret admiration for certain kinds of 'patent medicines.' We know of no reading that equals in its imaginative sweep the 'literature' which accompanies those artistically wrapped bottles of 'reliable, household remedies.' But the harmless 'patent medicine' is a solacing, if useless, thing that works no harm if it produces no benefits; while the living man who professes a skill that he has not is responsible for innumerable maimed bodies and poisoned lives. We feel that we are conservative in estimating that 80 per cent. of the people are attended by physicians of the 'regular' allopathic and homeopathic schools; and yet many newspapers are careful to keep silence on the subject because of a fear of offending the adherents of some cult or other who are supposed to regard even honest criticism as an offense. And we believe that fear to be ill-founded. . . .

"The men who make 'proprietary' medicines and sell them, not as 'patent' but authentic; and the unqualified 'quacks' who seek to practice under a title to which they have no just and qualified claim, are humbugs of an inimical kind with whom we can negotiate no truce. And we may as well make our attitude on that matter quite plain at this inception of the Medical Freedom 'League.' Because that 'league' is a contradiction in terms and it ought to have something very heavy and very hard hurled at it with great frequency."

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
BOWLING GREEN, KENTUCKY

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Third Month—Second Weekly Meeting

SURGERY OF THE KIDNEY

INJURIES OF THE KIDNEY

PATHOLOGY: 1. Penetrating, gunshot and stab wounds. Injury to kidney, ureter, blood-vessels, peritoneum. 2. Subparietal injury, rupture of kidney. Extent, structures injured, hemorrhage, extravasation of urine.

SYMPTOMS: Local injury. Hematuria. Prostration or shock, sweating, vomiting, pain.

TREATMENT: 1. Gunshot wounds. 2. Incised wounds. 3. Subparietal injury.

MOVABLE KIDNEY

ETIOLOGY: Pregnancy, lacing, loss of flesh, traumatism, association with enteroptosis, configuration of renal fossa.

SYMPTOMS: Digestive and abdominal symptoms, neurasthenia, Dietl's crisis. Physical examination.

TREATMENT: Palliative. Operative, indications, technic of nephrorrhaphy.

HYDRONEPHROSIS

VARIETIES: 1. Congenital. 2. Acquired, from traumatism, ureteritis, stricture, calculus, pyelitis, floating kidney, malignancy, prostatic enlargement.

PATHOLOGY.

DIAGNOSIS: Differentiate from cystic kidney, enlarged gall-bladder, tumor of liver or ovary.

TREATMENT: 1. Removal of obstruction. 2. Treatment of kidney.

Society Proceedings

COMING MEETINGS

Am. Assn. for Study and Prev. Infant Mort., Baltimore, Nov. 9-11.
Hawaiian Territorial Med. Assn., Honolulu, November 26-28.
Ohio Valley Med. Assn., Evansville, Ind., Nov. 9-10.
Southern Medical Assn., Nashville, November 8-10.
Virginia, Medical Society of, Norfolk, October 25-28.

AMERICAN ROENTGEN-RAY SOCIETY

Eleventh Annual Meeting, held at Detroit, Sept. 29-Oct. 1, 1910

The President, Dr. GEORGE E. PFAHLER, Philadelphia, in the Chair

The officers elected were given in THE JOURNAL, Oct. 15, 1910, p. 1390. Richmond, Va., was selected as the place for holding the next annual meeting, the time to be decided later.

Tuberculosis of the Lungs as Seen and Heard

DR. HENRY HULST, Grand Rapids, Mich.: The work I wish to report on was done in the Grand Rapids Tuberculosis Sanitarium for the purpose of determining the value of roentgenographic diagnosis in tuberculosis of the lung. The results were secured by physical examination, skiagrams and

autopsy, each observer working independently of the other, making an individual diagnosis, and then comparing his findings with the other two. Cavities, especially deep ones, are generally missed by physical diagnosis, but they are always shown on the plates, some of them even showing structural lung detail. Their depth is best determined stereographically. They always appear as dark spots, and in most cases are corroborated at necropsy. The skiagram never fails to show the disease in the presence of clinical evidence or physical signs; in fact, it shows better the extent of the disease than do the other methods. A diagnosis should not be made on the strength of physical diagnosis alone, nor on the tuberculin test, nor on the skiagram, although the latter is the best single method of diagnosis. In some plates, the healing process is graphically shown. The great advantage of the roentgenographic method is that it furnishes a correct, though incomplete, graphic reproduction of the microscopic anatomicopathologic changes in the lung. These pictures must be read, however, in the terms of post-mortem findings, and not of auscultation and percussion.

DISCUSSION

DR. K. DUNHAM, Cincinnati: I wish to emphasize the value of stereoscopic plates in making a diagnosis of tuberculosis of the lung. They are an absolute necessity. This work is showing us that we must look, not to the apices of the lungs, but to the hilus for the first evidence of tuberculosis. The difference in density from the normal is very apparent and is easily recognized by the expert.

DR. L. G. COLE, New York: In New York, I asked the board to have three independent physical examinations made of these patients before I made a skiagram. When those three men agreed on the physical signs, the process in the lungs was so extensive that it could not be considered incipient. The most interesting part of that was that it occurred in about 75 per cent. of the early cases, whereas in the other 25 per cent. these 3 men located the disease in different parts of the lung, but the skiagrams would definitely locate the disease—and it was not always the same man whose physical findings were corroborated by the skiagram.

Primary Lymphangiosarcoma of the Lungs

DR. ALFRED L. GRAY, Richmond, Va.: The appearance of the skiagram in this case was typical of an extensive miliary tuberculosis of both lungs. The patient had been bothered every summer and winter for the past six years with what he considered to be a severe cold, which would finally settle on his chest. His last attack was of three months' duration. There was loss of appetite, lassitude, loss in weight, and a very annoying and hacking cough, occurring in paroxysms and accompanied by intense pain in the chest. Expectoration was scanty and frothy. The heart was normal. There was slight impairment of resonance in the left supraclavicular region, with numerous dry râles in the left interscapular and subscapular regions. Temperature and pulse were normal. There were one or two enlarged glands in the right supraclavicular region. Histologic examination of one of these gave a picture of a typical lymphangiosarcoma. The patient died, but a necropsy was not permitted.

DISCUSSION

DR. H. K. PANCOAST, Philadelphia: I had a similar case last winter. The first radiograph I made showed the same picture as Dr. Gray saw in his plate, and had I not known something of the clinical history of the patient and the suspected diagnosis, I would not have known that it was not a case of pulmonary tuberculosis. A week or two later, I made a second plate, and found an effusion into the pleural cavity on the side most affected. It caused considerable confusion in the mind of the clinician, who could not understand the reason for these shadows when the case was undoubtedly one of growth in the lung. It is difficult to make a diagnosis between a growth of this kind and pulmonary tuberculosis, and it emphasizes the fact that an effusion in the pleural cavity may occur in these cases.

DR. K. DUNHAM, Cincinnati: In a case of carcinoma of the lung, the stereoscope saved us from making a diagnosis of tuberculosis. The question arises in Dr. Gray's case, whether it is not really a case of tuberculosis in the lung and lymphosarcoma in the gland removed from the neck. Unfortunately, a necropsy was not permitted; it might have cleared up the diagnosis.

DR. F. H. BAETJER, Baltimore: About six months ago, I saw a patient who apparently had an esophageal stricture. Bismuth was given and the skiagram showed that the esophagus was drawn over to the right side, and that both lungs were studded with tuberculous nodules, some being of good size. I made a diagnosis of tuberculosis, and gave it as my opinion that the stricture was caused by it. An operation was done and a carcinoma of the esophagus was found. The patient died, and at the necropsy we found the carcinoma, and on the edge of it a lot of tuberculous tissue. The lungs were studded with tuberculosis and carcinoma. The skiagram did not show the difference between the two.

DR. HENRY HULST, Grand Rapids, Mich.: I think that it is a mistake to base an absolute diagnosis of miliary tuberculosis or lymphosarcoma on plates alone, even when viewed stereoscopically. We must not base a diagnosis on insufficient data, because that will discredit our work.

DR. FEDOR HAENISCH, Hamburg, Germany: If no necropsy was made in this case, we should not be so very sure that the plate shows a lymphosarcoma of the lung. I think it is a case of miliary tuberculosis with a thickened pleura.

DR. L. G. COLE, New York: One point against the tuberculous nature of this case is the even distribution of the spots. It is rare to see tuberculosis affecting the entire chest in that way. There are always areas in which the disease is more extensive than elsewhere. The picture might correspond with a diffuse acute miliary tuberculosis. Of course, the clinical symptoms did not correspond with this.

DR. G. C. JOHNSTON, Pittsburg, Pa.: I have skiagraphed about 40 cases of carcinoma of the lung, and 12 or 13 of these were referred to me merely because of some slight affection, a little paralysis, of the vocal cord. The majority of these patients gave a history of previous operation for carcinoma, one patient had a breast amputated 20 years previously. There was no recurrence in the scar, but examination showed carcinoma or tuberculosis involving both lungs. I could not differentiate which was present from an examination of the plate alone. I inclined to a diagnosis of carcinoma, and in every case, time proved the correctness of that diagnosis.

DR. W. F. MANGES, Philadelphia: A more or less distinct outline of the growth is characteristic of sarcoma. I saw that shown distinctly in a case I had last winter. I think Dr. Gray's case was one of tuberculosis.

(To be continued)

MICHIGAN STATE MEDICAL SOCIETY

Forty-Fifth Annual Meeting, held at Bay City, Sept. 28-29, 1910

The President, Dr. J. H. CARSTENS, Detroit, in the Chair

The officers elected were noted in THE JOURNAL, October 15, page 1388.

President's Address: Medical Organization, Education, and Legislation

DR. J. H. CARSTENS, Detroit: Medical societies enable practitioners to keep up to date. Physicians should study the great question of eugenics, which is especially a medical question, and also place themselves in the front ranks for social purity. Medical laws are made for the benefit of the public, and the State of Michigan should appropriate money for the medical examining board, and not let the latter depend on the fees for medical certificates.

Expert medical testimony has been a blot on the medical profession. Laws should be enacted which would require every county medical society to select from its own ranks, say three men of every branch of medicine, who would be

considered experts in those branches. Large medical societies could select ten or twenty in each branch. If a case occurs in the courts for expert medical testimony, the judge should select the three men so designated, who are to examine the patients at their leisure, discuss the case among themselves, arrive at some conclusion, and bring in their report and testify to the findings. Even as the law now stands this would not prevent the other side from having other expert testimony, but few of the latter experts would be found who would testify contrary to the experts designated. By having such experts we would get more justice and shorter law suits, with less expense to the county. In other professions like pharmacy, dentistry, architecture and engineering the same method might be carried out, and so greater justice would be done in all law suits, and the work of the professional expert would be at an end.

Interpretation of Gross Findings in the Urine

DR. WILLIAM E. KEANE, Detroit: The gross observation of the urine will prove of most value in the management of gonorrheal patients. Vigilance here will sometimes anticipate a beginning epididymitis by noting the peculiar cloud of exudate that appears in the second tube, before any other objective or subjective symptom appears. The purulent urine of acute gonorrheal inflammation is, as a rule, free from shreds, but as the inflammation subsides and becomes localized, little scabs are formed that wash down with the streams of urine. As the pus decreases and the shreds appear, improvement will be daily more marked. Each and every shred has its story to tell. The thick pieces of irregular size are generally indicative of stricture or chronic inflammation. The thread-like strings that quickly settle, weighed down with pus, are from the anterior urethra. The so-called tadpole shred has a globular head, with a long cotton-like tail, and arises from a follicle of the deep urethra. The fleecy film which suspends near the top originates in the prostatic sinus and may contain prostatic cells, bacteria, spermatozoa and mucus. The heavier mucus is seen only in the first tube with an absolutely clear second tube, indicating trouble in the anterior urethral glands. Epithelium appears floating in the urine as a dark or light-colored dust, depending on the amount present. Besides the recognition of the individual shreds, one soon learns to note other changes in its character. Whether the urine is sparkling or flat, whether it is of high or low specific gravity will be determined at a glance. Bacteria, when present, will be found in both tubes. The gonococcus produces a dirty color, with an odor that offers confirmatory evidence. A patient suffering from chyluria will pass a urine that is distinctively indicative of his trouble. The milky-looking mixture is seldom, if ever, seen in any other urinary condition.

Pellagra

DR. E. L. EGGLESTON, Battle Creek, read a paper in which he presented a report of two cases of this disease with the diagnosis and treatment. He also reported the necropsy findings in one case, together with the etiology and pathology of the disease.

DISCUSSION

DR. JOHANN FLINTERMAN, Detroit: Did pain running along the course of the nerve trunks appear, and was it manifested by skin and internal symptoms? Were there other symptoms? Cases have been described in which there was a manifestation of some skin affection, combined with severe diarrhea and perspiration.

DR. CHURCH, Adrian: Did any of the patients recover?

DR. FRANK SMITHIES, Ann Arbor: Was the Wassermann reaction used in any of these cases, or was a blood examination made?

DR. E. L. EGGLESTON, Battle Creek: In one case which ran a very short course and terminated fatally, the patient complained of no pain whatever, and there was no rise of temperature any time; but there was a subnormal temperature during the course of the disease. The clinical manifestations are different in different cases. Frequently, when the nervous system seems to be particularly affected, there may be a great deal of pain. In the case reported as originating in Michigan, the patient had a great deal of pain in the back and head and neck, and complained considerably of headaches. Two of the patients died. Of the other three patients, one seems to be in very good condition, although there have been two recurrences of the disease. The other two are certainly getting worse and will not live very long. The mortality at present is considered to be about 35 per cent. The Wassermann reaction was not tried in any of these cases. The blood was examined frequently, a blood count made, and there was a moderate degree of anemia in each of the cases. I want to emphasize the point that if a patient, from the south or not, complains each spring of a feeling of great debility, loss of appetite, stomach disturbance and diarrhea, he should be watched very carefully. Many such cases appear in the north, many of them in Illinois; they are not limited to the south, and by keeping these points in mind one will not miss the diagnosis very often.

(To be continued)

KENTUCKY STATE MEDICAL ASSOCIATION

Fifty-fifth Annual Meeting, held at Lexington, Sept. 27-29, 1910

(Concluded from page 1492)

Diagnosis and Medical Treatment of Cirrhosis of the Liver

DR. G. W. PAYNE, Bardwell: Atrophic cirrhosis of the liver is incurable. So far as we know, there is no drug that can remove the cicatricial connective tissue; on the other hand, we know that these conditions can exist for years when compensatory circulation exists. The patient should abstain entirely from alcohol and live on a milk diet as nearly as possible. The diet should be nutritious, but not too rich. The gastric intestinal catarrh should be reduced, if possible, and the patient should lead a quiet outdoor life. Skin must be kept active and bowels open, and the patient should pass plenty of urine. For the ascites at its onset, or to prevent reaccumulation after tapping, such cathartics as magnesium sulphate, compound jalap powder or minute doses of calomel may be used. As a diuretic, I give bitartrate of potassium, combination of calomel, digitalis and squills, or infusion of digitalis. Lavage is useful in most cases, bitter tonics and acids may increase the appetite. If hemorrhage takes place from stomach or intestine, ice to the abdomen, morphin hypodermically and rest are indicated. If profuse diarrhea is present bismuth subnitrate, tincture of krameria or tincture of catechu may be used. In the syphilitic cases, or when syphilis is suspected, potassium iodid and mercury should be given in large doses.

Diagnosis and Treatment of Cholecystitis

DR. IRVIN ABELL, Louisville: Acute suppurative and gangrenous involvements of the gall-bladder are, as a rule, easily recognized; the local pain, tenderness and swelling, due either to distention of the gall-bladder or to surrounding adhesions, point unmistakably to the cause of fever and gastric distress. In such instances, an attempt at medical treatment is but to invite further disaster. Resort should be had to immediate drainage. In cases of the fulminating type, the diagnosis is not always easy; the sharp onset, violent pain, which is not always localized, vomiting, distention of the abdomen, rapid pulse, are seen with other lesions—notably of the appendix, or a beginning of peritonitis, from rupture of some of the hollow viscera. In such cases, the history is of value in making a diagnosis, particularly pain or discomfort in the gall-bladder area, immediately preceding the onset of symptoms. Such cases usually pursue a rapid course, leading to abscess formation, gangrene or rupture, and only prompt recognition and early operation give promise of saving life and restoring the diseased viscus to such a condition as to permit it to carry out its physiologic function. The indications for surgical treatment embody two principles: (1) removal of obstruction;

(2) institution of drainage. In some cases no abdominal operation is easier; in advanced and complicated cases, no abdominal operation is more difficult. The removal of obstruction may mean the removal of stones from the gall-bladder, cystic, hepatic, or common duct. It may mean that the operator must remove, or mechanically overcome, the effects of stricture of either of the ducts; in the case of the cystic duct, this may necessitate the removal of the gall-bladder; in the case of stricture of the common duct, it may mean a plastic operation on the duct or its junction with the intestine. Obstruction is frequently caused by adhesion and inflammatory deposit; thorough separation may be easy or may present difficulties which tax the most skillful. Drainage may be required in the gall-bladder, or in the common or hepatic ducts, and has to be made by means of rubber tubing, which is stitched into the ducts or bladder. The drainage should be continued long enough to overcome the infection. No operative procedure is complete unless a thorough examination of all the bile passages, demonstrating their potency, is made. With the elimination of obstruction and the institution of free drainage, we may safely promise a patient not only relief but permanent cure with a minimum exposure to danger.

State Care of the Insane

DR. CURRAN POPE, Louisville: Real investigation into the condition of those who enter state hospitals for the insane is either never made, or is at best superficial and never scientific. The time has come when the importance of treating the insane should receive the same intelligent consideration and care as is now given to the treatment of tuberculosis. The wave of public sentiment that has lifted tuberculosis to its present position should be duplicated with the mentally afflicted, and we should no longer hear of an unfortunate being classed as the "accused," needing prosecution on the one hand and defense on the other, both of which, in truth, are purely nominal and largely automatic. Our legislatures must awaken to the dangers of such a system and be prepared to accept all that modern psychologic work has done in its practical application to the mentally sick.

We should have no "asylums" for the insane; we need modern hospitals. The aim should be not to herd mentally unsound people in corridors flanked by rooms, to give them three meals a day, a few medicines, and control by attendants, but to use every manner of means known to medical science to cure them. There is a prevalent and wide-spread belief that, in the vast majority of instances, insanity is incurable; this is not true. The majority of insane patients do not recover because they do not receive proper diagnosis, and practically have no treatment. As a result, insane hospitals are truly and properly named "asylums," in which are kept hundreds of chronic insane, who live and die an "asylum life," simply because they have been subjected to custodial care alone. With a modern psychopathic state hospital, the patient could be quietly and without publicity sent for treatment on the recommendation of a commission of psychiatrists, whose report should be subject to supervision in chambers by the county judge. For the future care of Kentucky's mentally unsound, I would suggest a central hospital, modern in its equipment, located near a large city, with every facility for diagnosis investigation and treatment. Through this hospital, every patient would first have to pass, and when it was found that the unfortunate sufferer was condemned to permanent loss of mind, he could be removed to one of the present hospitals for custodial care. Such a hospital would be incomplete without a psychologic laboratory, equipped with modern instruments of precision, in the hands of a trained expert, with a corps of assistants, who could test and study and relieve many cases by well directed psychologic work alone. Modern psychiatry has advanced with rapid strides toward the more thorough and complete understanding of the intellectual mechanism of the insane, and any modern, up-to-date hospital that does not possess a full equipment of psychologic apparatus, with experts in charge, who devote their time and attention solely to the investigation and study of the ailments and afflictions of its patients, falls far short of the modern conception of hospital work.

Chronic Nephritis

DR. S. L. BEARD, Shelbyville: There are many causes for chronic nephritis—alcoholism, long exposure to cold and dampness. The gonococcus plays an important part in the cause of the disease, the germ may have been lurking in the joints or the prostate, and after all other symptoms of gonorrhea have disappeared, even years after the disease has been apparently cured, may give rise to acute or chronic inflammation of the kidneys. Other causes are acute infectious diseases, such as scarlet fever, which often produces the acute form, and maybe the chronic form of the disease. The disease is very slow to develop. Possibly the first symptoms to be noticed will be a slight edema of the eyelid or of the legs, then a listless feeling, the patient being restless at night and unable to sleep, with loss of appetite. Edema is always a prominent symptom, and will eventually give the patient a great deal of discomfort. As the disease develops, the legs may swell to an enormous size, with rupture of the skin and oozing of serum. The amount of urine in a case of chronic nephritis is very much diminished. Frequently the quantity will be diminished 40 per cent., some days a larger quantity may be voided. In the later stages of the disease, the volume of urine increases to some extent; the specific gravity is often below normal, it may possibly be normal or above. Little can be done in treating these patients, for we rarely see the case until it is well developed. We may advise the chronic alcoholic to stop drinking. The treatment of the chronic form of the disease is about the same as that of the acute. The first essential is to insist on absolute rest in bed for a period of time at least; of course, the patient should not be kept in bed indefinitely; a little sunshine and very moderate exercise will be beneficial, but for a time at least we should insist on rest and quiet.

Intracranial Complications of Otitis Media

DR. G. C. HALL, Louisville: The study of the intracranial complications of otitis media has been extensive enough, and over a sufficient period of time, to permit us to draw certain conclusions regarding the cause and effects of suppuration within the temporal bone, and for the most part the method to be applied to stop it and guard against its extension. As in other regions of the body, prophylaxis is of chief importance. It is much easier to prevent these conditions than to cure them when once developed. "Cure every case of otitis media," should be the watchword of the profession. In this way alone we would eliminate at least 90 per cent. of the complications of temporal bone suppuration, for, as a general proposition, it may be stated that primary acute otitis media with mastoiditis offers but few instances of intracranial involvement, and in them the infection is overwhelming. In dealing with this subject we practically presuppose the existence of mastoiditis, and in whatever light we view it the mastoid portion of the temporal bone becomes the object of our first concern. From a pathologic standpoint, the route of infection is nearly always through the mastoid cells, whether it be sinus thrombosis, brain abscess or meningitis. The symptoms are those primarily of mastoiditis with the symptoms of the complication added, and the treatment in all cases is directed to the thorough eradication of all diseased bone in the mastoid, as a preliminary to attacking the lesions of the deeper structures. In cases of suspected intracranial involvement, the organisms present in the discharge have an important bearing on the gravity of the lesion. It has been shown that the streptococcus is responsible in over 50 per cent. of these severe infections. In cases of sinus thrombosis, it can often be obtained from the general circulation. Prophylaxis is most important in dealing with these conditions. It is worth all the remedial measures we possess, and the truest and surest prophylaxis is obtained by putting every running ear under careful and intelligent treatment, and the correction of those diseases of the nose and throat that render the ear so liable to infection.

Acute Nephritis

DR. W. R. THOMPSON, Mount Sterling: All three forms of the disease are included under this heading, as it is impossible to differentiate the anatomic varieties from a clinical standpoint. Nearly every known disease has at some time been

shown to be accompanied or followed by acute nephritis. Acute infectious diseases are the most prolific causes, and scarlet fever heads the list; the specific organism of the disease, or its toxin, is responsible for the lesion of the kidney. The severity of the scarlatina or other infection bears no relation whatever to the occurrence of nephritis. Those suffering from the most malignant forms of the disease may entirely escape, while a patient with the mildest attack, and one which has perhaps been entirely overlooked, may have a most severe lesion of the kidney. It is important to bear in mind that a comparatively insignificant angina, mild rheumatism, or a slight attack of influenza, may be the forerunner of acute nephritis. The causative influence of cold in acute nephritis has been largely overestimated. In a majority of the cases, if the history is carefully and thoroughly investigated, the underlying cause will be discovered, and the exposure to cold will be found to be merely incidental.

Fracture of the Base of the Skull

DR. D. C. DONAN, JR., Horse Cave: Surgery of the skull is undergoing an evolution similar to stomach surgery in recent years. A source of error formerly was mistaken diagnosis. Fracture by *contre-coup* is a rare thing, according to Treves. The theory of Arran, as Archibald observes, merely states the fact. Rawlings' idea of a splitting force will explain some cases. Most cases can be explained by the law of von Wahl, namely, a fracture by bursting is due to bilateral compression, and the fissure runs parallel with the violence. The factors are velocity and momentum of the wounding object, as well as the shape or area of contact. The principal lesion is nearly always situated in the sella turcica, the petrous portion of the temporal bone, the greater wing of the sphenoid and the orbital plates. In nearly all cases, we are dealing with a compound fracture, and the high mortality is partly due to infection. Most cases with non-reacting pupils are fatal. Unconsciousness is not a reliable index of the severity. Under expectant treatment may be mentioned rest, restricted diet, purgation and the application of the ice coil. Hexamethylenamin has been recommended as a preventive of infection. Lumbar puncture has its advocates in selected cases. Decompression is a new addition to the list of operations for the relief of compression. Severe injuries, such as bursting fractures, with extensive laceration of the brain, are nearly always fatal, and these should be left to the inclination of the surgeon. Patients with immediate symptoms of compression and no laceration should be operated on. Cases in which there are late symptoms of compression and beginning optic neuritis, nearly always demand operation. In simple cases, in which there is no laceration and no compression, expectant treatment may be resorted to. In punctured fractures, we should explore all doubtful cases, and then follow the indications.

The Diagnosis and Treatment of Cancer of the Gastro-Intestinal Tract

DR. J. H. BLACKBURN, Bowling Green: The cure of cancer in the gastro-intestinal tract depends entirely on surgical treatment, hence it became necessary and imperative that the diagnosis should be made early, if we are to give more than temporary relief. The difficulty of the early clinical recognition of cancer in any portion of the gastro-intestinal tract is generally conceded, since a relatively large number of the patients do not present symptoms until late in the disease, often only after the involvement of adjacent structures. With the marked advances in the surgical treatment of the disorders of digestion during the last decade the history of cancer of the stomach has been entirely re-written. The classical symptoms of this condition, as found in all text-books on practice of medicine are anorexia, pain, vomiting, hemorrhage, humor and cachexia, the subjective symptoms varying somewhat with the location of the growth in the stomach. From the standpoint of the surgeon, these are late symptoms, for, if we wait for their development, the percentage of cures from operation will be very small. The surgical treatment may be divided into palliative and radical. The experience of both surgeons and physicians in the early diagnosis of gastric cancer is that the only way in which a positive diagnosis may be made is in the inspection of the parts when the abdomen is opened; therefore, exploratory laparotomy may be classed as one of the surgical procedures in the treatment of this condition. After passing the ileocecal junction cancer becomes a rather frequent lesion, increasing in frequency from the cecum through the colon and sigmoid to the rectum. In a large percentage of the cases of cancer of the large intestine the lesion is primary. It may be completely eradicated, and there are several factors which make the surgical treatment when instituted early a curative one, the most important of these being the slow rate of growth, the limited lymphatic drainage, the tendency to local extension rather than by metastasis. However, if we wait for the development of an acute or chronic obstruction, or for the presence of a distinctly palpable tumor, both of which may be called ancient symptoms, the time for complete removal of all the tumor and involved tissues may have passed.

Neurasthenia

DR. W. F. BOGGESS, Louisville: In every case of neurasthenia, ocular reflexes should be looked into and relieved by practical fitting glasses. For various mental conditions, fear, etc., exercise is the best remedy that can be used, and when the patient is able to do so he should do the things he fears most.

To sum up the treatment of neurasthenia:

1. Obtain control of your patient in every way possible, remembering that the attitude of the physician has much to do with the cure.
2. Find the cause, whatever it is, in the patient's habits, method and mode of living, past and present life; ascertain what physical defect may be present and remove it.
3. Determine whether the patient does or does not need the rest treatment, or intelligent supervision of exercise, work, rest and sleep.
4. Employ electricity, hydrotherapy, massage, psychotherapy, etc.
5. Include under general medicinal treatment the use of nux vomica, arsenic and the glycerophosphates, intelligently and physiologically administered.
6. Treat the various symptoms as they arise intelligently, always remembering that by paying too much attention to any one symptom you accentuate the trouble and thereby do your patient injury.

Cancer of the Uterus

DR. W. H. WATHEN, Louisville: Cancer arising in the cylindrical epithelium of the cervical canal is of the adenocarcinoma variety, and rapidly extends to adjacent structures, especially the parametrium and the bladder wall, quickly involving the lymph glands, and is often followed by metastasis in other organs. Hence, it is less amenable to treatment than cancer of the infravaginal cervix. Cancer arising from the endometrium, while it is from cylindrical epithelium and usually of the adenocarcinoma type, does not invade adjacent structures rapidly and seldom in the operable stage involves the parametrium, or by metastasis extends to other organs of the body. This variety, if seen in time, is more amenable to radical treatment than cancer of the cervical canal. All varieties of cancer of the uterus extend more rapidly to local structures, and is followed more quickly by metastasis in young, vigorous people than in old people. While many millions of dollars have been expended in research work to discover the cause of cancer, there is no positive evidence that the real cause is known. Special study has been along the lines of the parasitic theory, the cell autonomy and the biologic and biochemical nature of tumors. While no parasite has been discovered by any experimentation, this does not negative the fact that a specific germ is the cause, for the germ may be in the protoplasm of the cell and too small to be discovered by any power of the microscope yet devised. While cancer of the uterus does not usually appear until after the age of 30, and is more frequent between the ages of 35 and 55, it may develop in a girl of 15 or in a woman of 75. Cancer of the cervix is nearly always seen in women who have borne children, but I have often seen it in women who have had no children, and who probably never had sexual connection. If diagnosed and operated on in the early stages, the end results of cancer of the infravaginal cervix or the endometrium are far more encouraging than in cancer arising in the cervical canal, and the operation need not be so extensive, and may be performed in nearly every instance *per vaginam*. This is not true, however, in most cases of the

adenocarcinoma arising in the cervical canal, which so quickly invades the adjacent structures and must be widely removed in order to give the woman the best chances for recovery. Uterine myomata, with cancer of the uterus or cancerous involvement of the myomata, should be operated on by the suprapubic method. This association or involvement is rare. Cancerous involvement may result from continuity of cancer in the cervical canal or endometrium by metastasis from cancer in other parts of the body, or by the development of cancer in the epithelium of the glands of an adenomyoma. I recently removed a uterus with malignant involvement of myomatous tumors, caused by the extension of an adenocarcinoma in the cervical canal.

My experience in curettage, followed by the application of phenol and alcohol, encourages me in the belief that such treatment may often relieve pain and other symptoms, prolong life, and sometimes so change local conditions as to make operable a case that before such time was inoperable, in the sense that all involved structures could not be removed. In conclusion, let me repeat that until we know more about the cause and history of cancer, our success must depend on early diagnosis and prompt and thorough surgical treatment, being governed in the choice of operation by local conditions.

Expert Testimony

MR. EDWARD J. MCDERMOTT, Louisville: What are our remedies? First, each profession—especially the medical profession, which is called on most for expert testimony—must try to create a strong opinion, in its ranks and in its public associations, in favor of higher ethical standards, and must frown down its weak or corrupt members who allow themselves to be misused or besmirched as false or foolish witnesses. Second, the courts must be induced to inquire more fully into the qualifications of experts, and to handle, with more care and strictness, this clause of evidence which is often useful, and which can sometimes be corruptly used with success and impunity. This part of the reform must be accomplished by the lawyers and the courts. Third, legislation must be devised to strengthen the court's control of opinion-witnesses, and to prevent selfish and unscrupulous litigants from getting much benefit by hiring charlatans or cranks or dishonest, but shrewd and plausible men, of sufficient learning and experience, to enable them all the better to deceive a jury. It seems clear to me that the legislature has the power (1) to regulate the selection or calling of experts or opinion-witnesses, and (2) to regulate their compensation. It also seems clear to me that the legislature, in the interest of truth and for the protection of both the medical and the legal professions, should regulate both the selection and the compensation of such witnesses. The disreputable physician and the disreputable lawyer and their client now have such an unfair advantage of their reputable adversaries, that truth and justice are too often trampled down. As litigants with most money at their command may get the greatest number of experts, and the most expensive experts, the court should have the right (1) to prescribe a list of eligible men, (2) to limit the number to be called, and (3) to fix the compensation. No witness in any case should have a contingent fee. He should not have his compensation depend on the success of his testimony or his side. This is too great a temptation to partisanship. It may be wise (in the interest of the poor) to allow a lawyer to be employed on a contingent fee, for he is not a witness—he is not swearing to the right of his side—but there is no excuse for allowing a witness to be so tempted by self-interest to deviate from the truth where a deviation is so easy, and is never punishable, in an expression of a mere theory or opinion. Even contingent fees of lawyers, in damage suits and perhaps in other cases, should be subject to the scrutiny and control of the courts to prevent hardship and injustice to the poor in whose interest such fees are supposed to be allowed.

Inguinal Hernia

DR. B. F. VAN METER, Lexington: The simplest operation that focuses all effort on the complete removal and high ligation of the sac is the successful operation. The sac is not always recognized and identified by the occasional operator; sometimes it is never ligated at all, and then nothing but failure can result. Every hernia patient has the right to have laid before him, on the one hand, the comparative risk, the percentage of recurrences, the time of disability; on the other, the everlasting semidisability, and the danger of strangulation, with its enormous increased risk to life. There is small, but very definite danger from the anesthetic, when general anesthesia is used; when local anesthesia is used this danger is eliminated—a zero mortality in a hundred consecutive cases, two weeks' complete disability, two weeks of partial disability, with 95 per cent. of permanent cures.

Indications and Technic of Cerebral Decompression

DR. E. S. ALLEN, Louisville: The dominating factor in cerebral surgery is the effect of compression on brain tissue. While any other tissue may be compressed with comparative impunity, nerve tissue is compressed only at the cost of immediate loss of function, with slow restoration if pressure be relieved, and atrophy without regeneration if pressure be not relieved. Its high degree of differentiation makes it an easy prey to insignificant trauma, and its injury is frequently attended by early and easily recognizable symptoms. Local pressure and death of other tissue may pass unnoticed, but nerve fiber gives unmistakable sign and gives it regularly. The compression of nerve tissue, except in silent areas of the brain, will produce definite symptoms. Many of the lesions which affect the brain, and especially those which have a surgical bearing, do so by reducing the available space inside the skull. The symptoms of hemorrhage, tumor, etc., depend in the main on the compression which these various lesions exert directly on the brain. Realizing that cerebral compression results, ultimately, in medullary anemia, and medullary anemia in vasomotor paralysis, and vasomotor paralysis in bulbar starvation, with cardiac and respiratory paralysis, and that our principal guide in this intracranial pathology is arterial tension as recorded by the manometer, then I believe the chief indication for decompression must be when the tension reading reveals the fact that the struggle between the intracranial compressing force and the vasomotor center is becoming a life and death effort, and that it is best to interfere when the vasomotor strength is high and not wait until the compressing force is victorious and the arterial tension is dropping or undulating.

Acute Gastro-Intestinal Infection in Infants

DR. J. M. REES, Cynthiana: Since less than 10 per cent. of deaths due to intestinal disease occur in breast-fed infants, we should urge and encourage maternal nursing. While this is necessary in all classes, it should be especially insisted on among the ignorant and negligent. It requires but little experience, and may be done by those of very little intelligence and among the very poor, while artificial feeding is not successful unless carried on intelligently, and, at the same time, a certain amount of money is available to obtain reliable nourishment, especially pure milk. Too frequently, babies are taken from the breast when, with a little care and patience, lactation could be continued. We should point out the great danger a mother assumes when she undertakes artificial feeding without the necessary means or preparation. Mothers too often, in order to escape the hardships of breast feeding, remove the child from the breast, not seeming to understand that the puny, fretful, bottle-fed infant is infinitely more troublesome than the well-nourished, breast-fed baby that spends most of its time in sleep. The first feeding is always an experiment, and we should endeavor to begin with a mixture slightly weaker in fats and proteids than mother's milk, and increase in a gradual manner, until at the end of the first year the child is receiving plain cow's milk. Carefully fed infants, whose digestion is normal and whose feeding mixtures are prepared from fresh and clean milk, acquire an almost clock-like regularity in their habits, vomiting never occurs, and the bowel movements are yellow and come at regular intervals. Any change from this regularity is a signal of disturbance, which should be promptly investigated.

Colonic irrigation is, in many cases, as important as the initial purgation. By it any residue of feces or irritating secretions in the colon or rectum is removed, and, as it stimulates peristalsis, it assists in evacuating the small intestine. It also adds to the body an amount of fluid to compensate for the waste cause by the diarrhea. For the best results, the physician must personally attend to the irrigation, unless he has a competent nurse. This should be done two or three times during the first twenty-four or forty-eight hours; later, once daily is sufficient. Saline solution, at a temperature of 100 F., may be used, with a long rectal tube or catheter of sufficient caliber and stiffness to prevent it from kinking. The other local methods are the application of heat and counter irritation to the abdomen for their soothing effect; the use of cold for its antipyretic effect, and the application of heat when there is depression of the vital forces.

Other Papers Read

The following papers were also read: "The Present Status of Serum and Vaccine Therapy," by Dr. F. H. Montgomery, Danville; "Cancer of the Breast: Diagnosis and Treatment," by Dr. J. T. Reddick, Paducah; "Prophylaxis and Treatment of Scarlet Fever," by Dr. J. S. Lock, Barbourville; "Measles," by Dr. F. A. Frazer, Marion; "Prophylaxis and Treatment of Pneumonia," by Dr. J. C. S. Brice, Flemingsburg; "Abdominal Crises Caused by Pathologic Changes in Meckel's Diverticulum Other Than the Strangulation by Band," by Dr. George A. Headon, Louisville; "Abscess of the Liver: Diagnosis and Treatment," by Dr. J. I. Rathbun, Russell; "Electricity in Diagnosis and Treatment of Disease," by Dr. J. J. Rodman, Owensboro; "Something Old and Something New in Medicine," by Dr. D. O. Hancock, Henderson; "Popliteal Aneurism, With Report of Matas Operation," by Dr. J. R. Nurnan, Covington; "Diagnosis and Treatment of Enterocolitis in the Adult," by Dr. E. A. Stevens, Mayfield.

State Boards of Registration

COMING EXAMINATIONS

ARKANSAS: Regular, Little Rock, November 8-9. Sec., Dr. F. T. Murphy, Brinkley; Homeopathic, Little Rock, November 11. Sec., Dr. P. C. Williams, Texarkana; Eclectic, Little Rock, November 8-9. Sec., Dr. G. A. Hinton, Hot Springs.

CONNECTICUT: Regular, City Hall, New Haven, November 8-9. Sec., Dr. Charles A. Tuttle; Homeopathic, Grace Hospital, New Haven, November 8. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave.; Eclectic, Hotel Garde, New Haven, November 8. Sec., Dr. Thomas S. Hodge, 19 Main St., Torrington.

FLORIDA: Palatka, November 9-10. Sec., Dr. J. D. Fernandez, Jacksonville.

LOUISIANA: Homeopathic, New Orleans, November 7. Sec., Dr. John T. Crebbin, 1207 Maison Blanche Building.

MAINE: City Council Rooms, Portland, November 8-9. Sec., Dr. Frank W. Searle, 806 Congress Street.

MASSACHUSETTS: State House, Boston, November 8-9. Sec., Dr. Edwin B. Harvey.

NEBRASKA: State Capitol, Lincoln, November 9-10. Sec., Dr. E. Arthur Carr, 141 S. Twelfth Street.

NEVADA: Carson City, November 7-9. Sec., Dr. S. L. Lee.

TEXAS: Palestine, November 22-24. Sec., Dr. R. H. McLeod.

WEST VIRGINIA: Morgantown, November 14-16. Sec., Dr. H. A. Barbee, Point Pleasant.

Wyoming June Report

Dr. S. B. Miller, secretary of the Wyoming State Board of Medical Examiners, reports the written examination held at Laramie, June 22-24, 1910. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 10, all of whom passed, including one osteopath. Sixteen candidates were licensed through reciprocity. The following colleges were represented:.

PASSED College	Year Grad.	Per Cent.
Rush Medical College	(1910)	88.4
Atlanta School of Medicine	(1908)	76.4
State University of Iowa, College of Medicine	(1910)	88.7
University Medical College, Kansas City	(1904)	83
Creighton Medical College	(1909)	86.4, 87.3
Lincoln Medical College	(1910)	79.3, 90.5
Columbus Medical College	(1886)	75.9

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
George Washington University	(1897)	Dist. Colum.
Northwestern University Medical School	(1909)	Illinois
College of Phys. and Surgeons, Chicago	(1904) (1907)	Illionis
Rush Medical College	(1902)	Iowa
Drake University	(1907)	Iowa
Sioux City College of Medicine	(1903)	Iowa
Louisville Medical College	(1902)	Indiana
Baltimore Medical College	(1907)	Vermont
Maryland Medical College	(1904)	W. Virginia
University of Michigan, Homeopathic College	(1893)	Minnesota
Barnes Medical College	(1902) (1909)	Missouri
Eclectic Medical Institute, Cincinnati	(1908)	Iowa
Starling Medical College, Columbus	(1904)	Ohio
Medical College of the State of South Carolina	(1898)	S. Carolina

New Mexico July Report

Dr. J. A. Massie, secretary of the New Mexico Board of Health and Medical Examiners, reports the written examination held at Sante Fé, July 11-12, 1910. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 3, all of whom passed. Twenty-one candidates were licensed to practice on presentation of satisfactory credentials. The following colleges were represented:

PASSED College	Year Grad.	Per Cent
North Carolina Medical College	(1906)	77
Epworth College of Medicine	(1910)	87.2
Memphis Hospital Medical College	(1894)	75.1

LICENSED ON CREDENTIALS College	Year Grad.		
Gross Medical College	(1893)		
Hahneman Med. Coll. and Hospital, Chicago	(1880)		
College of Physicians and Surgeons, Chicago	(1906)		
Keokuk Med. Coll., Coll. of Phys. and Surg.	(1906)		
College of Physicians and Surgeons, Keokuk	(1890)		
University of Louisville	(1901)	(1909)	(1910)
Louisville Medical College	(1903)		
Hospital College of Medicine, Louisville	(1898)		
College of Physicians and Surgeons, Baltimore	(1888)		
Barnes Medical College	(1909)		
St. Louis Coll. of Phys. and Surg.	(1904)	(1910)	
Washington University, St. Louis	(1909)		
University Medical Coll., Kansas City	(1901)	(1903)	
Coll. of Phys. and Surg., Kansas City	(1897)		
Columbia University, Coll. of Phys. and Surg.	(1901)		
Vanderbilt University	(1889)		
University of Vermont	(1904)		

Book Notices

LEHRBUCH DER KINDERHEILKUNDE FÜR AERZTE UND STUDIERENDE. Von Dr. med. Bernhard Bendix, Privatdozent für Kinderheilkunde Dirigierender Arzt der Charlottenburger Säuglingsklinik. Sechste, Durchgesehene und Verbesserte Auflage. Paper. Price, 15 marks. Pp. 671, with 83 illustrations. Wien: Urban & Schwarzenberg, 1910.

Professor Bendix has for many years held a foremost place as an authority on diseases of children. The present edition of this work, the sixth, has been extensively revised and much of it wholly rewritten to include the latest advances in every department of pediatries. This is especially true of the chapters on nutritional disorders in infancy. The book everywhere gives the mature observations of one of Germany's greatest pediatricians, and is highly commended to every physician who is interested in diseases of children.

THE VEGETABLE PROTEINS. By Thomas B. Osborne, Ph.D., Research Chemist in the Connecticut Agricultural Experiment Station, New Haven. Price, $1.20 net. Cloth. Pp. 125. New York: Longmans, Green & Co., 1909.

Until the appearance of this monograph, one of a series on biochemistry, the data on the chemistry of plant proteins had not been collected and presented in a systematic way. It was not until recent years that the importance and the practical value of knowledge regarding vegetable proteins were appreciated and then largely through the well-known researches of the author himself. As a large portion of this monograph is in reality an abstract of the author's investigations, it is very accurate and covers the most recent work in this field.

The chemistry of plant proteins is considered historically, beginning with the study of gluten in wheat and covering the more recent discoveries of other proteins in various plants.

The book is not intended as a laboratory guide or handbook, but is a complete collection of descriptions of the various plant proteins, which have been investigated. Aside from the complete descriptive matter, the monograph contains tables and a very complete and valuable bibliography of the protein chemistry literature.

PHYSICAL EXAMINATION AND DIAGNOSTIC ANATOMY. By Charles B. Slade, M.D., Chief of Clinic in General Medicine and Instructor in Physical Diagnosis in the University and Bellevue Hospital Medical College, New York. Cloth. Price, $1.25. Pp. 146, with 36 illustrations. Philadelphia: W. B. Saunders Co., 1910.

The author has attempted to give in a concise manner practical points and definitions in the technic of physical examination, chiefly of the thorax and abdomen, with some reference to information that may be obtained by general inspection. The book, intended for students, is elementary in character, deals chiefly with the normal subject, and does not pretend to enter into the diagnosis of specific pathologic conditions, making reference to them only to illustrate the application and object of the different methods employed to elicit information. The topography of the chest and abdomen and the various anatomic structures within is well shown by numerous diagrams, and a few photographs are used to illustrate certain points. It is a practical and useful elementary exposition of the subject of physical diagnosis.

CLINICAL TREATISES ON THE PATHOLOGY AND THERAPY OF DISORDERS OF METABOLISM AND NUTRITION. By Dr. Carl von Noorden, Professor of the First Medical Clinic, Vienna. Part VIII, Inanition and Fattening Cures. Part IX, Technic of Reduction Cures and Gout. Cloth. Price, $1.50 each. Pp. 103 and 112. New York: E. B. Treat & Company, 1910.

The scientific considerations which are involved in the attempt to restore the nutrition to normal in emaciated individuals are first explained in chapters dealing with the phenomena of inanition and undernutrition and then the practical application of these principles in the treatment of these cases is explained. The exposition of the calculations necessary to determine the individual's nutritive requirements and the addition of several important tables make this part (Part VIII) of the book a very valuable guide. The important fact that a mere increase of adipose tissue does not always secure the highest grade of nutrition is particularly emphasized and the inability of the organism in certain conditions to avail itself of the increased pabulum furnished is clearly brought out. Incidentally the author exposes the fallacy of attempting to restore a normal condition of nutrition in certain tissues by supplying merely the component elements of the tissue. The use of calcium in rickets on this principle is shown to be fallacious. In a similar way the absurdity of the claims for the use of lecithin in nervous disorders is shown. It is a defect of the work that so much prominence is given to a much-advertised American breakfast food.

Part IX treats of reduction cures and puts a method of treatment which began in empiricism on a scientific basis. For the specific plans such as the Banting cure, etc. the author substitutes exact calculations of the needs of the patient based on his body weight and the calorific value of the different classes of food. The uric acid theory of gout and renal lithiasis is discussed with a frank admission of the paucity of our actual knowledge. The dietetic treatment is based on the principle of excluding exogenous purins and determining by experiment the degree of tolerance of the individual patient for purins on the same principle as we determine the power of the individual diabetic to metabolize sugar. The purin content of various articles of diet is described. The author makes no distinction between white and dark meats, as his own experience as well as the results of chemical analysis has taught him that the white meats present no advantage over the red in this respect. The uselessness of the so-called uric acid eliminants for the treatment of gouty arthritis is emphasized, although the author admits that we can influence to some extent the solubility of uratic deposits in the genito-urinary tract. This volume will form a useful and suggestive manual for those who treat this class of cases which is undoubtedly more numerous in this country than commonly supposed.

Medicolegal

Corporations Cannot Practice Medicine

The Court of Appeals of New York says: In re Cooperative Law Company (92 N. E. R. 15), where it holds that a corporation can neither practice law nor hire lawyers to carry on the business of practicing law for it, that it cannot do so any more than it can practice medicine or dentistry by hiring physicians or dentists to act for it. The legislature, in authorizing the formation of corporations to carry on "any lawful business," did not intend to include the work of the learned professions. Such an innovation, with the evil results that might follow, would require the use of specific language clearly indicating the intention. Business in its ordinary sense was aimed at, not the business or calling of members of the great professions, which for time out of mind have been given exclusive rights and subjected to peculiar responsibilities.

Salary of County Health Officer

The Supreme Court of Mississippi says, in Adams County vs. Aikman (52 So. R. 513), that the latter-named party had been for several years health officer for Adams County. In July, 1907, the board, by order on its minutes, fixed his salary for the 12 months next thereafter at $50 per month. No further order was entered with reference to his salary, but he continued to receive as such the sum of $50 per month until the expiration of his term, on April 30, 1909. On May 15, 1909, he was reappointed as such health officer. At its June, 1909, meeting, the board of supervisors, by order duly entered on its minutes, over his objection, fixed his salary at $300 per annum. At the August meeting of the board he filed his claim for an allowance of $50 per month, which claim was rejected by the board and a warrant directed to be issued to him for $75, or $25 per month, which he declined, and shortly afterwards brought suit for $150 for the months of May, June and July. In the justice court, where he brought suit, he recovered judgment, and also in the circuit court, to which an appeal was taken. But the judgment of the Circuit Court is reversed by the Supreme Court, which holds that he was entitled to recover from the county only the sum of $25 per month, the salary fixed by the board, and that, if dissatisfied with that allowance, he should have appealed from the order of the board fixing the same. Under section 2,509 of the Mississippi Code of 1906, it is the duty of the board of supervisors to fix the salary of a county health officer in advance of his appointment; but, in the event it fails to do so, it may fix his salary at a later date. To hold otherwise would result in depriving such officer of any compensation for services which he might have rendered after his appointment and before his salary was fixed, for the reason that he can receive no compensation except a salary fixed by the board. There is no conflict herewith in the prior decision that, where a salary of a health officer has been fixed by order of the board, it cannot be subsequently reduced to such an amount as virtually to abolish the office.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York

October 8

1. *The Carbohydrate Diathesis. W. E. Deeks, Canal Zone.
2 *Treatment of Diabetes Mellitus. T. S. Hart, New York City.
3 Anesthesia. J. T. Gwathmey, New York City.
4 *Residual Appendix. O. C. Smith, Hartford, Conn.
5 *Treatment of Typhoid with Vaccine. A. W. Hollis, New York City.
6 Hemophilia Treated by Transfusion. M. Hahn, Washington, D. C.
7 *Typhoid Fever. A. K. Sallom, Philadelphia.

1. **Carbohydrate Diathesis.**—Deeks maintains that patients suffering from one or more of the following disorders are consumers of an excess of carbohydrate food: indigestion, gastric ulcer, decaying teeth, stomatitis, constipation, chronic

pharyngitis, true rheumatic bronchitis, anemia, most dysmenorrheas, enuresis, etc. He believes the diet to be indirectly responsible for appendicitis, and frequently for tuberculosis. He does not state what the exact nature of the products of carbohydrate fermentation is, but he contends that his statements can be verified clinically, and from a humanitarian standpoint the results are worthy of a further investigation. In the tropics, unless engaged in active physical exercise, the nearer men keep to a diet consisting of meat, fish, poultry, milk, green vegetables and fruit, the less they suffer. In this combination is found an energizing, tissue-forming, low heat-producing food, free from fermentative properties and containing enough of the indigestible vegetable cellulose to stimulate intestinal peristalsis and elimination. Sugars should not be consumed at all, except in solution, on an empty stomach, and then sparingly. The amount of starch ingested should be proportionate to the physical exertion involved.

2. **Treatment of Diabetes Mellitus.**—Hart emphasizes the importance of taking proper care of diabetics with the mild type of the disease, and of subjecting them to suitable restrictions early in its course. By the painstaking control of the diet, under the guidance of accurate records based on careful observation, the progress of diabetes, in the majority of instances, may be so checked that it will never reach the most severe form. In other instances, although the disease becomes more severe in spite of our best efforts, we are nevertheless able materially to hinder the progress of the malady, and we may save our patients much suffering and lengthen their lives by a number of years.

4. **Residual Appendix.**—Smith believes that from our knowledge of the pathology of appendicitis and the comparative frequency with which appendicitis recurs sooner or later following an appendiceal abscess or general peritonitis caused by appendicitis, we must conclude that the residual appendix—that is, the appendix left after abscess and drainage—is much more subject to inflammation than the appendix which has not been diseased. If its mucosa is continuous with the cavity of the cecum it is still exposed to infection. In addition to that, its circulation has usually been partially destroyed, it has become adherent to the abdominal wall, or some other organ, and is in a position to be strained or traumatized. Moreover, there may be residual concretions and residual pockets of pus within the lumen which did not escape at the primary attack. If these deductions are correct there can be no doubt of our duty in advising a secondary operation, and explaining thoroughly to the patient the reasons for, and the advantages of, this procedure.

5. **Typhoid Fever.**—In the series reported by Hollis, 21 patients were treated by the older method of hydrotherapy, either by the tub bath or by sponging; 11 patients were treated with vaccine without hydrotherapy. In the remaining 5 cases the patients were too short a time under treatment to make any comparisons. The diet, in general, was of the high caloric variety. No drugs were employed, but strychnin and whiskey were used as stimulants in the severe cases. The bowels were moved by enemata. The patients who were treated by hydrotherapy, barring a few who were given sponge baths because of poor response to tubbing, had a tub bath at a temperature of from 80 to 90 F. for 15 minutes, with friction, every 4 hours from noon until midnight inclusive if the rectal temperature was 103 F. or higher. At 8 a. m. all received a warm soap and water sponge. Those treated by vaccination received no baths other than a daily warm soap and water sponge. In a very few cases 250,000,000 bacilli were employed but no different clinical or laboratory effect could be noticed between the smaller and larger doses. No fever reaction was obtained. No case ended by crisis. No death occurred among the vaccinated patients; 4 occurred in the other series, one from hemorrhage, one from toxemia, one from perforation and one from pulmonary thrombosis with necrosis of the whole left upper lobe of the lung. Headache, gastrointestinal symptoms and toxemia were far less frequent in the vaccinated series than in the other cases, and the absence of discomfort seemed striking, while convalescence was more rapid.

7. **Typhoid Fever.**—Sallom gives charts of the mortality curve of morbidity of 68,943 cases of typhoid observed in Philadelphia, from January, 1898, to June, 1909. Of this number 8,012 died, a mortality of slightly over 11.75 per cent. Mortality rises in February and March, falls in April and rises again in May, reaching its acme in July. It then falls again and rises toward October. The relationship of morbidity to mortality is striking. Morbidity reaches its lowest ebb in July, and is highest in September. The maximum of morbidity coincides with the minimum of mortality. The author believes that season has an important effect on mortality. With the maximum morbidity a minimum percentage of mortality is present, and vice versa, as morbidity falls mortality rises.

New York Medical Journal

October 8

8 Medical Photography. N. T. Beers, Brooklyn, N. Y.
9 Radiograms of Digestive Tract. L. G. Cole and M. Einhorn, New York City.
10 Intranasal Sarcoma. R. B. Scarlett, Philadelphia.
11 Bone Formation in the Mastoid Process. E. Amberg, Detroit.
12 The Doctor's Duty in Tuberculosis. J. Girdwood, Baltimore.
13 Inversion of the Puerperal Uterus. R. E. Davison, Pittsburg, Pa.
14 Retroversion of the Uterus. E. A. Schumann, Philadelphia.
15 Epidemics Among the Alaska Indians. S. A. Savitz, U. S. S. *Gedney.*
16 Alcohol and Its Relation to Legal Medicine. M. Keschner, New York City.
17 Plea for More Vigorous Campaign Against Malarial Fevers. G. E. Henson, Crescent City, Fla.

Boston Medical and Surgical Journal

October 6

18 Immunity with Special Reference to Vaccine Therapy. T. Leary, Boston.
19 *Types of Exophthalmic Goiter. J. G. Mumford, Boston.
20 Hysteria, with Necropsy. W. R. Woodbury and C. Reed, Boston.

19. **Exophthalmic Goiter.**—The first case reported by Mumford was that of a woman, aged 42. At the age of 37 she consulted her physician for what appeared to be a trifling heart lesion, for she found herself troubled with occasional dyspnea on exertion. Her physician discovered a slight mitral leak and some dilatation of the heart. Careful treatment and prolonged rest resulted in no benefit; gradually there developed further a constant distressing dyspepsia, pain and nausea after eating and a state of continual apprehension. These symptoms persisted for two years, when there developed further a mild, bilateral tremor of the fingers. At this stage she consulted Mumford and he suggested the diagnosis of exophthalmic goiter. Within a month there developed a series of characteristic symptoms: the thyroid became enlarged, with a typical thrill; the eyes gradually became prominent, with lagging of both lids and widening of the palpebral fissure; and the tachycardia became pronounced, the rate of the heart ranging between 110 and 130. Mumford instituted the use of hydrobromate of quinin, neutral, in 5-grain capsules, 3 times a day, and continued the medication without intermission for 15 months. During the early months of treatment the patient experienced great relief.

Twelve months after the beginning of the quinin treatment, through the accident of a serious grief, all her discomforts reappeared; the eyes became prominent and anxious, with their associated abnormal lid phenomena; her tachycardia returned; the heart became irregular; dyspnea became extreme; she was troubled with a constant diarrhea and distaste for food; profuse sweating became pronounced; the tremor returned in force; and the right lobe of the thyroid rapidly doubled in size. Thyroidectomy was done, and 8 months after the operation the patient appeared to be well, except for a slight exophthalmus.

The second patient, a vigorous young woman, of active habits, about 32 years of age, and the mother of 4 children, suddenly became extremely nervous; within a week she took on symptoms that suggested to her physician a rapid neurotic breakdown; she was sleepless, fretful, irritable and almost impossible to live with, as her friends asserted. Within a week after the surprising development of these symptoms her physician discovered a marked tumor of the thyroid gland. There was no other evidence of hyperthyroidism, with the

exception of the nervousness; there was no exophthalmos, no tachycardia or palpitation, no tremor, no digestive disturbance, no sweating; in fact, the diagnosis was founded almost solely on the nervousness and the rapidly enlarging thyroid.

This patient's physician, Mumford states, had the courage of his convictions, and his convictions were sound and accurate. Without stopping to employ drugs, and without waiting to see the development of the case, he proceeded at once to a surgical operation, and his activity seems to have been justified by the results. He removed the whole of the left lobe of the thyroid, leaving, however, the isthmus, with a considerable pyramidal lobe, and the whole of the right lobe. The lobe removed was the most affected; those parts which were left seemed to be but slightly hypertrophied. The patient promptly recovered from the operation and regained her normal health. Her symptoms of hyperthyroidism gradually returned after a year and became more settled and more pronounced than before. A second operation was decided on. Every reasonable operative precaution was taken to avoid increasing the hyperthyroidism. The operation occupied about 35 minutes and was extremely tedious, but the patient bore it well. Trouble began immediately after the patient was put to bed, however; she sank rapidly and died of acute hyperthyroidism about 36 hours after the operation.

Lancet-Clinic, Cincinnati

October

21 *Surgery of the Great Sciatic Nerve. B. M. Ricketts, Cincinnati.
22 Erysipelas as a Complication of Mastoid Disease. J. A. Stucky, Lexington, Ky.
23 What! Not Blind Yet? G. M. Gould, Ithaca, N. Y.

21. Abstracted in THE JOURNAL, Oct. 1, 1910, p. 1220.

American Journal of Medical Sciences, New York

October

24 *Dilatation of the Aorta. T. McCrae, Baltimore, Md.
25 *Heart Block with an Indication of Genuine Hemisystole. A. Stengel and W. Pepper, Philadelphia.
26 *Treatment of Aneurysm of the Aorta. A. A. Eshner, Philadelphia.
27 *Orthodiagraphy in Pathologic Conditions of the Heart and Aorta. T. A. Claytor and W. H. Merrill, Washington, D. C.
28 *Etiology of Subacute Infective Endocarditis. E. Libman and H. L. Celler, New York.
29 Syphilitic Febrile Pylephlebitis. A. R. Edwards, Chicago.
30 Treatment of Cardiospasm and Idiopathic Dilatation of the Esophagus. M. Einhorn, New York.
31 *Medical Uses of Rectal Infusions. H. Sewall, Denver.
32 *Roentgen-Ray Treatment of Status Lymphaticus. B. K. Rachford, Cincinnati.
33 *Splenomegaly Associated with Marked Anemia of the Pernicious Type. R. D. Rudolph and C. E. C. Cole, Toronto, Canada.
34 *Spinal Cord Lesions in Two Cases of Pernicious Anemia. C. N. B. Camac and L. S. Milne, New York.

24. **Dilatation of the Aorta.**—McCrae claims that dilatation of the aorta, considered apart from aneurysm, is relatively common and probably occurs more frequently than aneurysm. Two main etiologic factors stand out: (a) acute infections, notably rheumatic fever, and (b) those which cause general sclerotic changes. The symptoms often suggest disease of the heart itself. The physical signs are often very definite, of which visible pulsations in the upper interspaces, dulness over the upper sternum and adjoining interspaces, and the fluoroscopic examinations are the most important. Pressure signs are comparatively common, but are rarely severe. The diagnosis, as a rule, can be readily made from aneurysm. The outlook as regards dilatation is good.

25. **Heart-Block.**—The case of heart-block which furnished the basis for the observations made by Stengel and Pepper is said not to have been of such exceptional character that a separate publication of the clinical features would be of value, but the numerous tracings which were obtained furnished some interesting information and one of these proved of unusual importance in throwing some light on the possibility of true hemisystole. Although for a time complete heart-block existed and later partial heart-block, during the patient's stay in the hospital no Stokes-Adams syndrome was present. The complete block, after the administration of atropin, promptly changed to an incomplete block with a 3 to 1 rhythm, then to a 2 to 1 rhythm, and later to a normal rhythm. The 2 to 1 rhythm and the normal rhythm for a time alternated one with the other, and a number of tracings were obtained showing this change while the tracings were actually being made. It furnished indications of genuine hemisystole during the transition of the normal rhythm to a 2 to 1 rhythm. From this same tracing it could be demonstrated that the origin of the *c* wave is the right ventricular contraction, rather than the carotid pulsation. The *a-c* interval is longer in such cases as this during normal rhythm, while it may be normal in length during partial block. The auricular rate becomes faster when the normal rhythm changes to a 2 to 1 rhythm, and slower when the opposite change occurs.

In attempting to determine the cause of greater auricular rate during 2 to 1 or 3 to 1 rhythm than when no dissociation existed, it occurred to the authors as reasonable that the interference with auricular outflow, which is present at each alternate or third auricular contraction, would necessarily leave the auricle relatively unemptied and would thus occasion an earlier stimulus to contraction, which would result in a more rapid rate. When a change from normal to 2 to 1 rhythm occurs the quickening of auricular rate is less prompt than is the showing when a 2 to 1 rhythm changes to the normal. An explanation for this circumstance may be found in the fact that resumption of normal rhythm after a 2 to 1 rhythm at once relieves the auricle of back pressure and the consequent stimulus to increased rate. Such a sudden relief is followed by prompt re-adjustment of auriculur activity, whereas the effect of the change from normal to a 2 to 1 rhythm and the consequent gradual overfilling of ventricle and auricle would be met by a slower response. In this case, during the time of complete block, the ventricle rhythm was not at all times regular, although the ventricle usually contracted about 20 times to the minute, or about every three seconds; at other times there were irregular pauses, the longest being 5.4 seconds. There were, however, no extrasystoles at any time. It is known from physiologic experiment that, owing to poorly developed or retained independent rhythmicity, a portion of the ventricle, as, for example, the severed apex of the ventricle, tends to cease contracting after a time and will resume regular contractions only after an external stimulation. It is possible, therefore, that the continued action of the ventricle sometimes for long periods and despite occasional long pauses in cases of complete block may be due to the stimulus of distention with blood resulting from the continued auricular action.

26. **Aneurysm of the Aorta.**—Eshner concludes that aneurysm of the aorta is essentially a fatal disorder, although exceptionally spontaneous cure takes place. Accordingly, treatment can, as a rule, be only palliative, relieving symptoms and prolonging life. Deligation is inapplicable from anatomic considerations. Rest, ergot, iodids, gelatin, calcium chlorid, adrenalin chlorid, and introduction of foreign substances, with or without the passage of a galvanic current, have been employed. Horsehair, catgut, needles, watchspring and wire of various kinds have been introduced, with varying results, and a galvanic curve has been passed through conducting substances. Wiring with electrolysis has been employed in a moderate number of instances, with satisfactory results in the majority. The procedure has proved simple and safe, but it is applicable only to sacculated and not to fusiform aneurysms.

27. **Orthodiagraphy.**—According to Claytor and Merrill the orthodiagraph is of real value to the clinician, and as it becomes more commonly used we may be able to formulate some useful facts which as yet it is unwise to attempt. The instrument is by no means necessary in all cases, but may be an aid to diagnosis in many more or less obscure pathologic conditions of the heart and aorta.

28. Abstracted in THE JOURNAL, May 28, 1910, p. 1806.

31. **Medical Uses of Rectal Infusions.**—Sewall believes that it must be admitted that the favorable results accompanying the use of proctoclysis in appropriate medical cases indicate that this method of quasi-internal hydrotherapy deserves such a thoroughly detailed study as will accurately establish its indications and limitations in medical therapeutics.

32. **Status Lymphaticus.**—A study of the two cases mentioned by Rachford indicate that the disappearance of the lymphocytosis under the roentgen-ray treatment of the thymus in status lymphaticus is so marked that a careful study of the blood state in this condition will give important information not only as to the efficacy of the treatment, but as to the length of time this treatment should be continued. It will be wise, perhaps, to discontinue treatment when the lymphocytosis disappears, even though there still be left some cough and stridor. The chloro-anemia which is not improved under the roentgen-ray treatment may be aggravated if it be continued too long. Following the roentgen-ray treatment in these cases, hypodermic injections of iron, with careful feeding and fresh air, may be necessary to restore the blood state to a normal condition. In both of the cases here reported slight cough and stridor were present when the roentgen-ray treatments were discontinued, but disappeared entirely a few weeks later.

In the roentgen-ray treatment of status lymphaticus in infants and young children, although no portion of the body is exposed to the influence of the rays except that which directly holds the thymus, there are the following results of this treatment:

1. The hyperplastic thymus decreases in size and the cough, stridor and asthma disappear.
2. The enlarged spleen and lymph nodes decrease in size.
3. The exhaustion and general feebleness of constitution gives place to normal conditions of health and strength, and physical and intellectual growth are greatly stimulated.
4. There is rapid disappearance of the marked lymphocytosis which characterizes this disease.
5. Excessive physiologic action of the thymus gland is controlled.

The slight return of the symptoms, stridor, cough, etc., at intervals of three or four months in one of the cases, and the quick control of these symptoms by one or two exposures to the roentgen-ray, indicate that the gradual regeneration of the thymus following the roentgen-ray treatment may be accomplished by a gradual reproduction of the same pathologic conditions, hypersecretion, etc., which were present before the treatment was begun.

33. **Splenomegaly.**—The blood-picture in the case suggested a diagnosis of pernicious anemia; the marked number of nucleated red cells (13,000), and especially the great proportion of megaloblasts (29 per cent.), making it probable that it was the plastic form of this disease. The splenomegaly present, although being unusual in pernicious anemia, would by no means exclude it, as cases are on record in which the spleen was quite large and in which the disease was undoubtedly of the pernicious type. Osler records such a case, which was at first taken to be one of splenic anemia, but subsequently came to necropsy and proved to be one of pernicious anemia, and in something like 1 per cent. of all cases of pernicious anemia the spleen is so large as to reach to the umbilicus. But assuming that the case be one of pernicious anemia, even then it presents several most unusual features. In the first place the disease commenced at the age of 8 years, if not earlier, which is very unusual. Again, it has lasted for at least 20 years, and the patient is still in comparatively good health; and yet the longest cases recorded, apart from 6 cases of apparent recovery, only lasted between 14 and 15 years. Further, according to the patient's history, he was so well between the ages of 14 and 28 that he was never laid up nor did he require any medical advice, that is, he seemed to have a remission of 14 years, and yet the longest recorded remission from prostrating symptoms on record is 6 years, although McPhedran recently reported a case in which there was a remission for 17 years.

As regards splenic anemia, the enormous size of the spleen with the marked anemia and a normal differential white blood-count would superficially suggest such a diagnosis, but the very profoundness of the anemia would be against this conclusion, and further, the fact that the anemia was always of the pernicious form with a high color index would seem to exclude this diagnosis. Other forms of splenomegaly with anemia, such as congenital syphilis, tumor, malaria, and even a possibility of filaria were all carefully weighed and excluded. The case would appear to be one either of pernicious anemia of an exceptionally prolonged type, commencing at an exceptionally early age, and associated with an exceptionally large spleen, or one of splenic anemia with an exceptional blood-picture.

34. **Cord Lesions in Pernicious Anemia.**—These two cases illustrate two of the types of nervous-system involvement occurring in the course of pernicious anemia. In the first case, which had the longest and more pronounced history of anemia, the nervous symptoms were at a minimum and the posterior columns of the cord, particularly in the cervical region, alone showed degeneration, characteristically patchy in distribution. In the second case, the nervous involvement, particularly in the later stages, overshadowed the anemia. Here the spinal cord presented very extensive, yet incomplete degeneration with slight replacement gliosis in the posterior columns, and also a similarly irregular but more diffuse degeneration in the lateral tracts, which, however, was a rather less complete and apparently somewhat more recent, process.

Woman's Medical Journal, Cincinnati

September

35 Diabetes Mellitus. L. L. Gannett, Adams, N. Y.
36 Athletics in Our Schools and Colleges. A. Camp, White Plains, N. Y.
37 Prenatal Influences. J. G. Wildman, Toronto, Canada.

Atlanta Journal-Record of Medicine

September

38 Early Diagnosis of Peritonitis. R. M. Harbin, Rome, Ga.
39 Practical Aids in Medical and Surgical Diagnosis. L. M. Gaines, Atlanta, Ga.
40 Chronic Non-Gonorrheal Infections of the Prostate. E. G. Ballenger, Atlanta, Ga.
41 Hypertrophied Tonsils and Adenoids an Etiologic Factor in Backward Children. G. H. Cooper, Opelika, Ala.
42 Considerations in Surgical Convalescence. H. P. Cole, Mobile, Ala.
43 Nature of Neurasthenia. T. A. Williams, Washington, D. C.

Journal of the Michigan State Medical Society, Battle Creek

October

44 *Medical Organization, Education and Legislation in Michigan. J. H. Carstens, Detroit.
45 The Profession of Medicine. E. T. Abrams, Dollar Bay.
46 *Incontinence Following Rectal Operations. L. J. Hirschman, Detroit.
47 Gynecology. R. R. Smith, Grand Rapids.
48 Tuberculin: Its Value in the Diagnosis and Treatment of Tuberculosis. L. W. Howe, Coldwater.
49 Distressing Bladder Symptoms. F. W. Robbins, Detroit.
50 *Varicose Ulcers of the Leg. D. W. Roos, Manistique.

44. Abstract of this appears in department of society proceedings this issue.

46. **Fecal Incontinence.**—Hirschman says that if one is familiar with the anatomy of the sphincter muscles, avoids the use of the actual cautery or the injection of escharotics, is careful not to injure the muscular layers of the bowel in excising hemorrhoids, incises the sphincters at right angles in excising fissures or fistulas, and uses common sense in his after-care—avoiding packing and using drainage—there is no reason why incontinence of feces should ever be held up as a reproach to those who are doing honest and conscientious work in rectal surgery.

50. **Varicose Ulcers.**—The formula most frequently used by Roos in the treatment of these ulcers is the following:

R			gm. or c.c.
Gelatin	℥i	or	30
Zinc oxid	℥ss		15
Glycerin	℥xlv		55
Water	℥iii		90

Mix and prepare over a vapor or hot-water bath.

The amount of any of these ingredients may be varied, the other medicants, such as ichthyol or boric acid, may be added. This is spread, while quite warm, over the entire surface of the cleansed and disinfected leg by means of a brush. When the paste begins to harden, a muslin bandage is placed around the leg, and a second coating applied, and this is fol-

lowed by a second muslin bandage. A window must then be cut through the dressing directly over the ulcer, through which dusting powder and absorbent material may be applied daily. This dressing may remain for from 3 to 7 days and is easily removed with hot water. Later, it may remain 2, 3 and even 4 weeks. It exerts a gentle elastic pressure, and is much more comfortable than an elastic bandage or stocking. Roos says that this dressing will also be found of good value as a prophylactic during pregnancy, when these veins sometimes become engorged and extremely painful.

Quarterly Bulletin of Northwestern University Medical School, Chicago

September

51 Old World Uncinariasis. A. A. Goldsmith, Chicago.
52 Experimental Blastomycosis. P. D. Gutierrez, Chicago.
53 Subcutaneous Traumatic Rupture of the Liver. E. C. Riebel, Chicago.
54 Blood-Vessel Surgery. V. D. Lespinasse, Chicago.
55 The Teaching of Infant Feeding. I. A. Abt, Chicago.
56 Desmoid Test in Gastric Disturbances. L. J. Osgood, Chicago.
57 Congenital Hydronephrosis. C. Smith, Spokane, Wash.

Maryland Medical Journal, Baltimore

October

58 The General Practitioner Then and Now. F. B. Smith, Baltimore.
59 *Value of Employment of Patients in State Hospitals. R. P. Winterode, Catonsville.
60 Benjamin Rush and Early American Medicine. H. M. Cohen, Baltimore.

59. **Employment of Patients.**—Winterode in summarizing his paper states that the remedial benefit from a therapeutic standpoint is as follows:

To the Curable Cases.—When instituted in the incipiency of psychoses it offers an opportunity for early mental restitution, thereby affording facilities for the treatment of new cases.

To the Incurable Cases.—It is a means of re-education, transforming those of filthy and vicious habits with destructive inclinations into tidy, contented and useful members of the household.

To Alcoholic Psychoses and Drug Habitues.—It acts as a prophylactic, lessening the predisposition to relapse by creating new habits, instruction in new vocations, which will encourage inclination along different paths having more favorable environments and different associates.

Farm Colony.—It relieves congestion, admitting of classification, with home environments and greater amount of freedom.

Economic Value.—This consists in utilization of products in the hospital, manufacture of which has been the means of restoring the patients to health. The saving is in cost of furniture, clothes and other articles which may be destroyed; also in extra supervision of patients to prevent assaults, to say nothing of the quantities of hypnotics which would be necessary were they not kept busy.

Cooperation of state industries, Winterode says, provides a market free from competition with organized labor; produces, by means of the hospital, articles cheaper and better suited for their needs at sufficient profit than can be purchased on the open market; encourages development of other industries, and also acts as an incentive to instruct patients in skilled labor, which will come in good stead when discharged. This will take place as follows:

To the State.—Relief of burden of taxation, the necessary consequence were they to become charges for life.

Farm Colony.—The most economical plan of caring for the insane, with rational reduction of accommodations as well as maintenance, without reducing essential comforts.

Ethical Value.—Placing in homelike surroundings, with supervision, where pernicious habits are corrected, provides a disciplinary agent and reorganizes habits, or, in other words, prepares the individual for competition with his fellow-men.

Journal of the Tennessee State Medical Association, Nashville

September

61 *Treatment of Salpingitis. J. H. Carter, Memphis.
62 Surgical Aspect of Epilepsy. G. G. Buford, Memphis.
63 Treatment of Acute Ailments in Persons Addicted to the Habitual Use of Narcotic Drugs. G. E. Pettey, Memphis.

61. Abstracted in THE JOURNAL, April 30, 1910, p. 1467.

United States Naval Bulletin, Washington, D. C.

October

64 *Insanity in the Navy. H. Butts, U. S. Navy.
65 Presence and Prevalence of *Necator Americanus* in Samoa. P. S. Rossiter, U. S. Navy.
66 Problems of Sanitation in Landing and Expeditionary Service in Tropical and Subtropical Regions. Translation P. J. Waldner, U. S. Navy.
67 *Helminthologic Technic. P. E. Garrison, U. S. Navy.
68 Improvised Incubator for Ships. L. W. McGuire, U. S. Navy.
69 An Efficient Rat-Killing Device for Use on Board Ship. F. M. Munson, U. S. Navy.

64. **Insanity in the Navy.**—In the Government Hospital for the Insane, Washington, D. C., are gathered together more than 2,900 mental and nervous bankrupts. During the period January 1, 1899, to June 1, 1910, Butts found that there were 634 admissions of insane men of the Navy and Marine Corps to this institution. Of this number, 34 have been readmissions and 72 have been retired officers, naval beneficiaries, and supernumeraries who could not properly be considered in the same statistical tables with those men who just prior to their admission into the hospital were performing active service in the Navy or Marine Corps. There remain then 528 cases of insanity from the active lists of the service during the period named which have on one or more occasions been admitted to the hospital. The conspicuous features of Butts' study are the large number of recoveries—49.24 per cent.—and the very small number of deaths—6.64 per cent. He found also that 67.24 per cent. of the insanity of the navy occurs in men under the age of 30.

Of the foreign-born, Ireland has furnished a conspicuously large number of insane men, while her average annual percentage of enlistments has been relatively small, the ratio being 7.95 per cent. insane men to 1.91 per cent. enlistments. Germany, on the other hand, has furnished a much larger average annual percentage of enlisted men than any other foreign country, and a relatively small percentage of those men have become insane—very much smaller than Ireland—the ratio being 2.65 per cent. insane men to 2.22 per cent. enlistments. The Government Hospital for the Insane was opened in 1855; from that date up to and including June 30, 1909, there have been admitted into the institution 5,865 foreign-born insane patients. Of this number 2,282 were born in Ireland and 1,614 were born in Germany. Only one insane Filipino, a musician, has thus far found his way into the hospital. Next in importance to alcohol, bad heredity and syphilis, heat or sunstroke, seems to have been the most frequent etiologic factors.

From his examination of the insane men of the Navy and Marine Corps now undergoing treatment at the Government Hospital for the Insane, and the case records of those who have been discharged from the hospital, Butts has been impressed with the great desirability of inquiring into the family and personal histories of candidates of enlistment before accepting them as recruits. He feels sure that if more care were exercised in this respect by recruiting officers that an immense amount of money could be saved the department, as well as extra work for other medical officers, and there would be great diminution in the number of admissions of insane men of the Navy into hospitals for their care.

67. **Helminthologic Technic.**—The essential steps of the methods employed by the U. S. Naval Medical School Laboratories in the collecting, killing, preserving, clearing, staining, mounting, and sectioning of flatworms, roundworms, and ova, respectively, are given by Garrison as follows:

Collecting: Wash in warm water, or, preferably, salt solution; in case of ova wash thoroughly by repeated sedimentations in water.

Killing: Flatworms.—Kill in following solution: Saturated aqueous solution of bichlorid of mercury, 70 per cent. alcohol, equal parts; mix and add 1 per cent. glacial acetic acid; use heated to about 70 C.; wash in running water; remove residue of bichlorid with iodin alcohol.

Roundworms.—Kill in 70 per cent. alcohol heated to about 80 C. Allow to cool.

Ova.—Kill as for roundworms, or add 5 per cent. formalin.

Preserving: Transfer to 70 per cent. alcohol—5 per cent. glycerin mixture. (Except formalized ova.)

Clearing Without Staining: Roundworms and Ova.—Clear on the slide with caustic-potash solution (30 per cent.) or with glycerin, or first with the caustic, followed by glycerin. Clear in bulk by allowing the alcohol to evaporate from a glycerin-alcohol mixture, leaving sufficient glycerin to cover the specimen.

Flatworms.—May be treated as for roundworms, but are usually stained (q. v.).

Mounting from Glycerin: Either mount directly in glycerin, ringing cover glass heavily with cement or balsam or (for more durable preparations) transfer to glycerin jelly, mount, and ring cover glass.

Staining and Mounting in Toto: Flatworms.—Flatten between two slides held by a rubber band and stain in carmine from one or two to twenty-four hours or longer. Remove from between slides and decolorize in alcohol or in acid alcohol, watching progress of decolorization under microscope. Replace between slides and pass through dehydrating alcohols to xylol and mount in balsam. (If aqueous carmin is used the specimen need not be compressed until after decolorization.)

Roundworms and Ova.—Little or nothing can be gained by attempting to stain ova or roundworms except when the latter are first sectioned.

Sections: Flatworms.—Usually stained in bulk before sectioning. Dehydrate, clear, and imbed in paraffin, carefully orienting the specimen. Cut sections thick.

Roundworms.—Sections seldom needed. Cut worm in pieces to allow fluid to penetrate from the ends. Impregnate thoroughly with a hard paraffin. Cut thick sections and stain on the slide in alcoholic carmin.

Wisconsin Medical Journal, Milwaukee

September

70 *The Wassermann Reaction in the Pathology, Diagnosis and Treatment of Syphilis. R. M. Pearce, New York.
71 The Wassermann Reaction. C. A. Baer, Milwaukee.
72 *Prophyiactic Measures in Development of Insanity. A. W. Rogers, Oconomowoc, Wis.
73 Dermatitis of Unusual External Origin. O. H. Foerster, Milwaukee.

70, 72. Abstracted in THE JOURNAL, July 23, 1910, pp. 343 and 344.

Military Surgeon, Washington, D. C.

October

74 *Camps of Instruction for Militia Medical Officers in 1909. G. S. Crampton, National Guard Pennsylvania.
75 House Construction in the Tropics. H. H. Rutherford, U. S. Army.
76 Mathematics and Medicine. L. C. Duncan, U. S. Army.
77 The Red Cross First-Aid Corps. G. M. Blech, Chicago.
78 Infection of Southern Recruits with Intestinal Nematodes. A. G. Love, U. S. Army.
79 Venomous Snakes of the United States, Their Bites and Treatment. W. C. Lyon, U. S. Army.
80 Catatonic Dementia Præcox, and Its Economic Importance to the Naval Service and the Government. H. Butts, U. S. Navy.
81 *A Freezing Microtome. N. Roberts, Washington, D. C.
82 Variola Hemorrhagica. R. E. Ebersole, Washington, D. C.
83 Medical Conditions in Liberia. P. M. Ashburn, U. S. Army.
84 The Private Sanitary Filipino Scouts. E. L. Ruffner, U. S. Army.

74. Abstracted in THE JOURNAL, Nov. 13, 1909, p. 1683.

81. **Freezing Microtome.**—The apparatus described by Roberts is identical in principle with the ordinary carbon dioxid operated freezing microtome, except that the cold is applied by a slow current of brine at a minimum temperature of about 12 C. instead of by a rapid current of carbon dioxid gas at 30 C. or lower. In fact, with a few easily made alterations, the same instrument might be used for carbon dioxid and brine alternately. The brine is usually made by the interaction of fine ice and salt in a slightly elevated reservoir, and is run into and away from the microtome by rubber or metal tubing. The flow is regulated by a cock of some sort; a brass stop-cock mounted on the base of the instrument is best, but a simple screw-cock compressing the rubber tubing answers every purpose. To secure an even distribution of the cold, the brine, on entering the drum of the instrument, should first strike the center of the freezing plate and then radiate equally in all directions and be drained off below. This is brought about without difficulty by a suitable arrangement of entrance and exit tubes and a baffle plate. The advantages of this apparatus are said to be: simplicity, cheapness in the first cost and operation, wide availability (it can be used wherever ice and salt are to be had), and rapidity combined with great steadiness and regularity of operation, due to the high capacity for heat of the brine as compared with that of the gases used in other forms. Moreover, the brine can easily be prepared of any temperature desired down to —12 C., which is plenty low enough, and maintained at exactly the desired temperature. The freezing being under perfect control, much better sections can be cut than with carbon dioxid freezing, where the temperature and rate of flow of the freezing medium are subject to wide and only partially controllable variations.

American Journal of Physiology, Boston

October

85 Preparation and Properties of Thrombin. W. H. Howell, Baltimore.
86 Latency of Knee-Jerk Response in Man. C. D. Snyder, Baltimore.

Journal of the Medical Society of New Jersey, Orange

October

87 *Personal Experiences in Renal Surgery. G. N. J. Sommer, Trenton, N. J.
88 *Stomach Surgery. E. Staehlin, Newark.

87. **Renal Surgery.**—Briefly, Sommer's cases were as follows: Case 1.—Abdominal section and drainage for tumor in lower abdomen mistaken for mesenteric cyst. Second abdominal operation and removal of an ectopic kidney. Recovery. Case 2.—Acute septic infarction of the kidney; nephrectomy. Recovery. Case 2.—Acute infection in hydronephrosis; nephrectomy. Recovery. Case 4.—Chronic pyonephrosis; nephrectomy. Recovery. Case 5.—Hypernephroma; nephrectomy. Recovery from operation; death later from recurrence. Case 6.—Carcinoma; nephrectomy and appendectomy; operative recovery. Death from recurrence later. Case 7.—Stone in the pelvis of the kidney; pyelotomy. Recovery. Case 8.—Calculus in pelvis of the kidney; pyelotomy. Recovery. Case 9.—Calculus in hydronephrosis; nephrectomy. Recovery. Case 10.—Calculus pyonephrosis; nephrectomy. Recovery.

The skin preparation of these patients has been of two kinds, the first being the usual hot water and soap, alcohol and 1 to 1,000 solution of bichlorid; the second, the iodin method, which consisted in painting the operative area with an 8 per cent. solution of iodin crystals in 95 per cent. alcohol. This is applied twice just before operation and covered with a sterile dressing. Both methods have been satisfactory. The kidney has usually been exposed by an incision beginning at the outer border of the erector spinæ muscle, 2 c. m. below the last rib. It runs downward and forward parallel with the last rib toward the inner side of the anterior superior spine of the ilium. If necessary to secure room the incision is made to the outer border of the rectus. The perirenal fat is torn through or removed with the diseased organ when necessary, as in malignant disease or severe perinephritis.

In removal of the kidney the ureter is tied off as low down as possible with chronic catgut and the stump sterilized with carbolic acid and alcohol. The vessels are usually tied with silk. When the pelvis of the kidney has been opened the wound has usually been closed with plain catgut interrupted sutures and a cigarette drain placed down to the suture line. No leakage has been noted in cases in which this was done. In nephrectomy the wound has usually been drained with gauze or rubber tubes. The wound is closed with chromic catgut for the deep layer and interrupted silkworm gut sutures which are removed on the tenth day. The drain comes out on the third day and is not replaced. The patient is usually permitted to drink freely of water after the operation, and when the urinary secretion is deficient, spartein sulphate, 2 grains hypodermically, is given every 3 hours.

88. Abstracted in THE JOURNAL, Aug. 6, 1910, p. 527.

Medical Fortnightly, St. Louis

September 26

89 The Owen Bill for Establishment of a Federal Department of Health, and Its Opponents. S. A. Knopf, New York City.
90 Alterations in Stools as Indications for Change of Food in Infants. J. Zahorsky, St. Louis.
91 Stenography for Physicians and Nurses. A. L. Benedict, Buffalo, N. Y.

American Medicine, Burlington, Vt.

September

92 Treatment of Flat-Foot. R. E. Soule, New York City.
93 *Relation of Nasal Disease to Hay Fever and Asthma. C. G. Crane, Brooklyn, N. Y.
94 *Administration of the Public Health. D. E. Hoag, New York City.
95 *Friedreich's Ataxia in a Child Five and a Half Years of Age. M. Neustaedter, New York City.
96 The Medical Library and Its Influence on Medical Culture and Remuneration. B. Holmes, Chicago.
97 Rheumatism—Its Symptoms and Differential Diagnosis. S. V. Haas, New York.

93. **Relation of Nasal Disease to Hay Fever and Asthma.**—Crane reports five cases which he believes support his view that hay fever and asthma are reflex neuroses caused in many instances by nasal disease. Therefore treatment of the nasal condition is indicated.

94. **Administration of the Public Health.**—The establishment of bureaus of health is advocated by Hoag. He would have each bureau with its own building and its corps of physicians be the administrative health bureau for the particular neighborhood in which it was located. One or more experienced physicians would be in charge with a dozen or more assistants according to the needs of the locality. These would all be under municipal pay, as the whole system would be under the municipal control and supported from the city's funds.

The duties of the assistant municipal physicians would be to visit from time to time, daily or tri-weekly, every family within their district, attend cases of illness when needed, advise regarding sanitation and infection, and report cases of violation of law. Conditions and circumstances or cases of illness which they were incompetent to handle would be reported to their superior officers, whose duty it would then be to direct and take charge of them. A system of promotion according to time of service and ability would also be a part of the system. The admission into the ranks of the physicians attached to the Bureau of Public Health would be by competitive examination.

The whole system would be a valuable clinic for the physician before entering private practice, for he would get actual experience in visiting families in their homes which is never obtained either in the dispensary or the hospital. This would in nowise affect the private practitioner or his livelihood. There would always be a demand for the private physician by the better classes just as we have private tutors, although there is a public school system, or have private detective agencies as well as a public police system. The whole system would tend, Hong thinks, to elevate private practice rather than to do it harm. As an embellishment to a public health system such as this, it should be made a misdemeanor, he says, not to pay the private physician, since the municipality had provided a means by which medical attendance could be had by the poor without pay; just as the state at the present time assigns legal aid to the person without funds, so would the municipality honor the bill of a physician who had been imposed on by persons who if they had chosen could have obtained free medical services. The local public health bureaus could also appropriately maintain supervision over practitioners in general, so far as irregular practices and insanitary septic methods are concerned. Young physicians on graduating would elect whether they should wish to enter on private practice at once or enter the ranks of municipal health officers.

95. **Friedreich's Ataxia in a Child.**—A boy, aged 5½ years, family history negative as to tuberculosis, alcoholism or syphilis, born after normal labor, a breast-fed baby, was well nourished and robust up to the age of 3 years. At that time, vomiting without apparent cause at the rate of once in two or three months after drinking a cup of tea. Two and a half years ago his vomiting came on once every week, soon after rising in the morning, stomach being empty. After a few weeks the vomiting became more frequent, three times a week for two weeks, and then once every day, always in the morning soon after rising. This continued for six months, at the end of which time he was vomiting a few times a day. No medication could stop it. During these six months, the father noticed that his gait began to be slightly unsteady and that he could not run about as heretofore. During these six months he also complained of severe headache, then vomiting suddenly ceased and the headache left the patient when he was taken ill with fever which left him after three days, but he was unable to rise or walk without being supported, and that condition is present to-day. Six months after the onset of this fever he began to show an ataxia in the upper extremities which is fully developed to-day.

The musculature of the body is in a decidedly hypotonic state; patellar reflexes absent. Argyll-Robertson pupil present. The gait is that of typical tabes; speech is rather slow. Examination of the fundi of the eyes showed negative results. There is no nystagmus and hearing is normal. There is marked ataxia in the upper extremities; no disturbance of sensation, sphincters normal. The intelligence of the child is absolutely intact. Noguchi's modification of Wassermann's reaction of the blood is positive. The child is unable to walk or stand without being supported; deep muscular sense is gone; otherwise, he is doing very well.

Chicago Medical Recorder

September

98 Sterile Catgut. F. Kuhn, Kassel, Germany.
99 Management of the Sick-Room. G. F. Butler, Chicago.
100 Nose and Throat Disease a Contributory Cause of Pulmonary Tuberculosis. L. J. Lautenbach, Philadelphia.
101 Open Operative Treatment of Fractures of the Patella. A. P. Heineck, Chicago.

Archives of Ophthalmology, New York

September

102 Histologic Findings in a Case of Tuberculous Cyclitis, and a Theory as to the Origin of Tuberculous Scleritis and Keratitis. F. H. Verhoeff, Boston.
103 Glaucoma from Adhesion of the Lens Capsule to the Cornea. A. Knapp, New York City.
104 Optic-Nerve Diseases Due to Poisoning with Organic and Inorganic Arsenical Preparations. O. Schirmer, New York.
105 Implantation of a Metal Ball in Tenon's Capsule. W. M. Sweet, Philadelphia.
106 Tumor of the Adrenal Gland with Metastasis in the Orbit. A. Quackenboss, Boston.
107 Hemeralopia. C. Hess, Würzburg.
108 Blood-Vessels of the Cornea. A. Brueckner, Würzburg, Germany.
109 Pathology of Vitreous Fibrils. R. Greeff, Berlin, Germany.
110 Traumatic Affections of the Orbit. F. Cause, Würzburg, Germany.

Monthly Cyclopedia and Medical Bulletin, Philadelphia

September

111 *Senile Epilepsy. E. D. Fisher, New York.
112 Autogenous Vaccines in Recurrent Abscess Formation. G. G. Ross, Philadelphia.
113 Etiology of Alcoholic Inebriety. L. D. Mason, Brooklyn, N. Y.
114 Preparatory Treatment of Surgical Patients. A. M. Crispin, New York City.

111. Abstracted in THE JOURNAL, May 28, 1910, p. 1811.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

September 24

1 Use and Abuse of Lime Salts in Health and Disease. J. Barr.
2 *A Curative Treatment of Cholera. L. Rogers.
3 Cholera. M. M. Basil.
4 *Diagnosis and Treatment of Syphilis. E. J. Feibes.
5 *Pityriasis Rubra Pilaris. J. G. Tomkinson.
6 Serodiagnosis of Syphilis. J. E. R. McDonagh.
7 Rice Diet in Acute Skin Diseases. L. D. Bulkley.
8 Treatment of Favus. J. F. H. Dally.
9 Varieties of Molluscum Contagiosum. P. S. Abraham.
10 Actinomycosis, with Special Reference to Treatment by Potassium Iodid. R. B. Wild.
11 Electrolysis for Hirsuties. W. Evans.
12 Pemphigus Vegetans. G. Pernet.
13 Investigation of a Dermatitis Among Flower-Pickers in the Scilly Islands, the So-Called "Lily Rash." D. Walsh.
14 Paleogenesis. J. Hutchinson.
15 Treatment of Skin Diseases by Vaccine Therapy. J. L. Bunch.
16 *Cutaneous Diphtheria. G. W. Dawson.
17 Solid Carbon Dioxid in Dermatology. E. R. Morton.
18 *Treatment of Roentgen-Ray Burns. A. Eddowes.
19 Human Trypanosomiasis. D. Bruce.
20 *Features of Tuberculosis in India. J. R. Roberts.
21 Leishmania Tropica or Oriental Sore in Cambay, India. R. Row.
22 "Tropical Broncho-Oidiosis." A. Castellani.
23 Special Factors Influencing the Suitability of Europeans for Life in the Tropics. R. H. Charles.
24 Serum Treatment of a Horse Suffering from Trypanosomiasis. A. Connal.
25 Lacto-Bacillin in the Treatment of Tropical Intestinal Ailments. J. Cantlie.
26 Phlebotomus or Sandfly Fever. C. Birt.

2. **Treatment of Cholera.**—Feeling convinced that a careful study of the changes in the blood would yield valuable indications for treatment, Rogers has carried out a long series of researches on these lines, especially during the past three years. The first result was the reduction of the death-rate to barely one-half by the use of hypertonic saline intravenous injections in the collapse stage, and blood-pressure-raising measures as a preventative of later uremia. From 1895 to 1905, the death-rate was 59 per cent. In 1906, when normal salines were used intravenously, it fell slightly to 51 per cent., but on these being given up once more in 1907, as of little use, it rose again to 59.5 per cent. The hypertonic solutions were commenced early in 1908, and during two years' observations the mortality among 294 cases was only 32.6 per cent., or but little more than one-half the previous rate, thus affording conclusive evidence of the great life-saving value of the new method. However, an effectual cure of cholera is most likely to result from some simple method of destroying or rendering harmless the toxins within the bowel itself, thus preventing their absorption in fatal doses. Rogers therefore set to work to find such an agent of a non-poisonous nature, and this agent he believes to be permanganate salts. The permanganates are given in two different ways. First, in solution, to drink *ad libitum* in the place of water. Beginning with from one-half to one grain to the

pint, on account of the unpleasant astringent taste, the strength is rapidly increased up to from 4 to 6 grains in 1 pint, or even stronger if the patient will swallow it. Fortunately, in severe cases the thirst is so great that no difficulty is usually experienced in pushing the drug in this way. Vomiting may occur, but does no harm. On the contrary, it probably helps to remove some toxin. Calcium permanganate is the best salt for this purpose, Rogers believes, being somewhat less astringent than the potassium salt, while as it is divalent it will exert a greater oxidizing action. The calcium element may also possibly lessen the effusion through the bowel wall. The other method of administration is in pill form, for which purpose the potassium salt is more easily dispensed on account of the hygroscopic properties of the calcium and sodium compounds. The simplest method is to mix two grains of potassium permanganate with a little kaolin powder and vaselin, and make as small a pill as possible. It is then coated so as to dissolve only on reaching the alkaline small intestine, where its action is wanted. It is important to see that the pills dissolve readily as they sometimes become hard and inefficient after being kept some time, and may then pass through the bowel unchanged. Rogers now gives one pill every quarter of an hour for the first two hours, and then every half-hour until the stools are colored green and become less copious, which usually occurs in about twelve hours. In mild cases they need only be given during alternate four-hour periods. Barley water may also be administered to maintain the strength, as it is not readily acted on by the permanganates. At the beginning of the second day eight more pills are given, and in severe cases this is repeated on the third day in order to avoid relapses, which have occurred in three cases. They all promptly yielded to a renewal of the permanganate treatment, however, thus furnishing an additional reason for believing its action to be directly curative. The internal administration of permanganates in cholera for the purpose of destroying the specific toxins within the alimentary tract was commenced by Rogers in August, 1909. By the end of the year 17 cases, including 10 severe attacks requiring transfusion, had been treated, with only 1 death.

4. **Diagnosis and Treatment of Syphilis.**—For a thorough mercurialization, Feibes is of the opinion that the method of "Schmierkur" (rubbings) is the most efficient; with no other treatment, he says, can we so thoroughly regulate the admission of mercury; we can stop it at a moment's notice, and easily prevent the discomforts and dangers of acute mercurial poisoning. If for any reason the "Schmierkur" is inapplicable, injections of calomel may be recommended as being of equal value; their disadvantages are the painfulness, the risk of abscesses, and their dangers in cases of idiosynerasy. They are undoubtedly of great efficacy, especially as regards producing an effect quickly.

5. **Pityriasis Rubra Pilaris.**—Sixteen years ago, after commencing work as a lithographic stone polisher, the palms of the patient's hands became red and thickened. Recently, follicular papules appeared on the proximal phalanges of the fingers of both hands, later on the middle phalanges of the third and fourth fingers, and subsequently on the back of the hands, affecting in the main the skin over the first, second and fifth metacarpal bones. Later, the fronts of the wrists, the outer aspects of the forearms, and the backs of the elbows became affected. On examination, in addition to the lesions already mentioned, isolated follicular papules were seen on the lower abdomen. Large horny, dark gray follicular papules were conspicuous over the dorsal convexity of the spine, extending laterally. In the summit of the intergluteal fold—namely, over the sacrum—the papules were closely aggregated, presenting a somewhat verrucose appearance, and a similar condition was present over both ischial tuberosities. The knees were similarly but not so markedly affected, and there were some hyperkeratoses where the boot is laced. The soles were erythematous, the neighborhood of the heels was markedly hyperkeratotic, as was also the center of the right sole. The forehead was slightly erythematous, but no scaling was observed. The upper half of the bridge of the nose showed telangiectases. A few comedones were present on the face, and also on the back of the neck. The scalp was scaly but not markedly so. The affected areas of the hands, fingers, intergluteal fold, and ischial tuberosities were slightly but definitely erythematous, and there was a suspicion of erythema on the mid-dorsal region of the trunk. The erythema appeared to begin perifollicularly and spread laterally until neighboring specific centers of origin coalesced into one continued patch. The finger nails were longitudinally striated. The papules throughout are distinctly follicular and contain a central horny cone. According to the patient's story, the first evidence of the disease was on the palms after commencing work as a lithographic stone polisher. Tomkinson suggests that these clinical signs doubtless point to pressure as a determining or accessory agent in the development at least of some of the lesions in this and, perhaps, on closer observation, in other cases, but nothing more, otherwise pityriasis rubra pilaris could be by no means a rare affection. Doubtless the actual cause must be sought for internally.

16. **Cutaneous Diphtheria.**—Of the 10 recent cases Dawson has seen 4, and in 9 of them there was no membrane or other usual manifestation of diphtheria. All but 2 of these cases occurred in children; 4 of them ended fatally, 7 of them were of an impetiginous eczematous type, and in 3 of them there were vesicles and bullæ which gave rise to a profuse discharge. In 4 there was severe conjunctivitis, with copious serous and purulent discharge. The commonest and therefore most typical form occurs in children, and has the appearance of an impetiginous eczema, nearly always affecting the head and face, and associated with severe conjunctivitis, sometimes with otorrhea and rhinitis, the whole forming a clinical entity from which a diagnosis may be deducted with some degree of confidence.

18. **Treatment of Roentgen-Ray Burns.**—The chief object of Eddowes' paper is to call attention to an operation which he has introduced for the relief of bad cases in which painful ulceration has occurred and proved rebellious to ordinary treatment. Slight cases can be easily managed by the application of fomentations, lotions, and pastes of various kinds, and Unna's zinc-gelatin. For some of the chronic cases, particularly those commonly involving the backs of the hands in *x*-ray workers, he has found few remedies to equal compound tincture of benzoin. In severe cases in which there is pain, rigidity and ulceration, it sometimes happens that the ulcers heal but slowly, if they heal at all; and, if healed, easily break down again. In these cases Eddowes resorts to nerve section. He says that not only do incisions relieve pain and tension, and cure the ulcers, but they also, by bringing in extra new tissue, increase the mobility of the parts.

20. **Tuberculosis in India.**—Roberts attempts to show that tuberculosis manifests itself in India rather differently than in Europe, not at all in the tuberculosis lesions of organs but in the beginning of the disease, and that it adds another prolonged fever to the many fevers encountered in that country. There are three forms in which early tuberculosis shows itself. They differ, curiously enough, and for some unexplainable reason, from the early signs seen here in Europe: (1) An acute febrile form resembling a typical typhoid, which Roberts calls "acute tuberculous fever," and encountered principally in young adults; (2) an irregular fever with enlargement of the cervical glands, the carotid chain, and those under the jaw, and seen principally among children; (3) a debility associated with dyspepsia and constipation, resembling tropical debility. Even here the thermometer shows afternoon or evening rises to about 100 F., very easily overlooked.

Lancet, London

September 24

27 Etiology and Treatment of Rheumatoid Arthritis. P. W. Latham.
28 *Clinical Surgery in Japan. Y. Takaki.
29 Uterine Prolapse. J. B. Hellier.
30 Bilateral Papilledema and Ring Scotoma Due to Sphenoidal Sinusitis. C. G. R. Wood and G. F. C. Wallis.
31 Microscopic Diagnosis of Tumors at Time of Operation. E. H. Shaw.
32 *Pneumonia. W. E. McKechnie.
33 *Radical Cure of Hemorrhoids. J. O'Conor.
34 Malignant Diphtheria with Multiple Lesions in an Infant J. D. Rolleston.

35 A Visit to Professor Treupel's Clinic; the Use of "606." J. G. Garson.
36 The Wandering Womb and Fumigation. D. McKenzie.
37 Motoring Notes. C. T. W. Hirsch.

28. **Clinical Surgery in Japan.**—The number of patients operated on by Takaki for hemorrhoids by the Whitehead method is 176—124 males and 52 females. They were all treated by the same method and completely cured, except in 7 cases—3 cases of stricture, 2 cases of ulcer on the mucous membrane, 1 case of paralysis of the sphincter, and 1 case of pulmonary embolism. Of 3 cases with stricture 2 were patients in the Charity Hospital. They left the hospital a few days after operation and did not return to the hospital for some time. So the stricture was due to the early discharge and their carelessness. The other case was due to the early opening of the bowels before the wound had had time to unite properly. Two cases of ulcer were due to leaving the mucous membrane too long, so that after the wound healed a portion of mucous membrane appeared outside the anus and the ulcer was formed by the rubbing of the trousers. This could have been prevented by removing the mucous membrane at the time of operation. One patient complained of the inability to retain the feces, especially when suffering from diarrhea. This patient had had prolapse of the rectum for 8 years and even before the operation he was unable to retain the feces. So Takaki does not consider this patient to have been paralyzed by the operation. Three of these operations were done under local anesthesia. Of course, it was more difficult owing to the rigidity of the sphincter, but it can be done without much pain. In one case of prolapse it was fairly easy.

Takaki treated 7 cases of carcinoma with thymus gland. For making the powder he used the fresh calf's thymus gland. It was dried under low temperature and ground into powder. It was given by the mouth and the doses were from 0.01 to 0.05 gram twice a day between meals. After a few trials it was Takaki's habit to give sodium sulphate combined with it. He says that it is wonderful how the pain disappears. The thymus powder seems to have some power of disintegrating the tissues of the malignant tumor by suppuration or necrotic changes. The size of the tumor was in one case diminished, and in two cases became smaller by disintegration. It seemed to retard the growth of the tumor. It has more effect on carcinoma than on sarcoma. Indigestion is liable to occur.

32. **Pneumonia.**—It is McKechnie's practice to give morphin in the early stages of pneumonia if there is pain preventing sleep, or if there is much restlessness, or if the amplitude of the respiration appears to be sufficiently diminished to cause an accumulation of carbon dioxid. The diminution in amplitude of respiration is no doubt a protective process which gives rest to the inflamed lung. On the one hand, he says, we have the diseased lung for which rest and repair is the best thing; on the other hand, we have the patient, the owner of the lung, to whom a certain continued respiratory activity is essential. The physician must try to hold a judicious balance between these more or less temporarily conflicting interests, always remembering that he must ease the amount of physiologic work the lungs have to do as much as possible, and at the same time enable the patient to live over the crisis. The first dose of morphin McKechnie gives is usually 0.008 gm., and, he says, one seldom needs to give more than 0.016 gm. He invariably gives morphin hypodermically; as he considers this to be the only sound and safe way, as the effect of the dose becomes apparent in a few minutes and there is no danger of unabsorbed doses causing unexpected poisoning.

During the last ten years he has given morphin to between 200 and 300 adults suffering with acute lobar pneumonia, usually giving it during the first three days of the attack, most frequently on the evening of the first or second day. Out of all these cases he can not recollect a single instance in which there appeared to be any harmful effect. On the contrary, the benefits have usually been marked. The breathing becomes easier, the pain is relieved, the circulation improved, and the patient gets some of that rest and sleep which is such an important element in conserving the energy and in diminishing the manufacture of carbon dioxid. The use of ice, hot compresses, poultices, etc., may be dispensed with, and the patient need no longer battle with a gigantic poultice on his already overtaxed and overheated chest; morphia relieves the pain and gives sleep far more efficiently. McKechnie's experience causes him to doubt the soundness of those warnings against the use of morphin which are indulged in at present. It seems to him probable that the fear of using morphin has been based on some unfortunate results, possibly really unconnected with its administration, perhaps due to its employment in an injudicious way, as, for instance, by oral administration.

33. **Radical Cure of Hemorrhoids.**—After proper preparation for the operation, about one minute is spent in placing four of Lane's artery forceps to the four cardinal points of the anal circle; these, irrespective of rugosities, are applied exactly at the junction of the mucous membrane and the skin. The forceps, say, on the north and east are seized, the intervening portion is rendered taut, and with a good scissors the mucodermal line is rapidly divided; the same process is repeated with the remaining three segments, and thus the circular discission is effected. The depth of this primary cut includes skin and some subcutaneous tissue. In the next stage the left index finger is introduced into the anal canal to act as a guide, and the tissues are snipped carefully with scissors right round and straight down to the submucosa; as the external sphincter comes into view it is pushed upward with a blunt dissector. This process of defining the submucosa and pushing the sphincter up out of harm's way must be carried out thoroughly all round, and on no account must any advance be made until the adit level is struck—the submucous coat. During this process of freeing the mucous cuff it is necessary to apply six or eight pressure forceps to the cut edge of the mucous membrane for traction purposes; the latter, by the way, must be done gently, for the forceps are liable to slip off or tear their way out. The cuff having been freed up to the transverse fold of the mucous membrane which indicates the site of the internal sphincter, a vertical slit is made in the former up to this point, and immediately the apex is sutured to the skin, a series of small transverse snips are then made through it at this level, and sutures applied. If any vessel spurts it is seized and ligated. When concluded the area of sutured circle ought not to exceed the size of a half dollar, unless there has been considerable previous prolapse. A morphin suppository is inserted, the part is thoroughly cleaned and dried, and a dry gauze sponge is applied and is kept in position by a pad of wool and a T-bandage. On the third evening 5 grains of calomel are given, followed by a tablespoonful of oil on the fourth morning. As often as the bowels act the dresser cleanses and dries the part, and reapplies dry gauze dressing. On the tenth day the patient is allowed out of bed and is discharged a few days later with a pot of carbolized petroleum, which he is instructed to apply into the rectum three times a week for a month.

38. This number is devoted exclusively to educational matters.

Medical Press and Circular, London

September 14

38 Educational Number.

September 21

39 Prognosis in Phthisis Pulmonalis. T. D. Lister.
40 Effect of Foodstuffs in Prevention of Dental Caries. J. S. Wallace.
41 Luxuries as Remedies in Cardiac Diseases. M. Herz.
42 *Iodoform and Thyroidism. A. R. Short.

42. **Iodoform and Thyroidism.**—A middle-aged woman was treated for a carbuncle in the perineum, which was dressed by a medical practitioner and a nurse with very ordinary quantities of iodoform. During three weeks, about half an ounce of the powder was dusted on, and altogether about 40 inches of narrow iodoform gauze packing were used. The carbuncle healed well under this dressing. For weeks after the cessation of treatment she continually complained that she could smell and taste iodoform, though there was in reality none in the house. She went to the South of England to recoup her strength three or four weeks later, and stayed ten days. On her return she was noticeably ill; there was great emaciation, she was nearly 28 pounds below her normal

weight, the pulse was always 120 or more, the thyroid was moderately enlarged, tremor was marked, and she was exceedingly nervous and restless. Short considered it a case of exophthalmic goiter. The onset of the present illness was in January, 1909. There has been very slow but decided improvement, and now, April 1910, she is almost well, but has to lead a very quiet life.

Short connects this case with the use of iodoform because the trouble followed soon after the application of the drug, although it was not diagnosed for about a month. She undoubtedly suffered from iodoform poisoning, because the smell haunted her long after the drug was omitted. Iodoform is proved to cause hyperthyroidism of the acute type, and it is therefore reasonable to suppose that in a susceptible person chronic thyroidism might be produced. Iodoform should be used sparingly on absorbing surfaces, especially in adults. It should be avoided if there is any reason to suspect a tendency to exophthalmic goiter. The treatment of early cases of parenchymatous goiter should be directed to altering the drinking water and to introducing iodin. It would appear, since iodoform causes thyroidism more readily than iodids, that iodin ought to be given to such patients in organic combination. In the treatment of exophthalmic goiter, iodin starvation should be worth a trial. This could be effected by a meat diet.

Clinical Journal, London

September 14

43 Pneumonia. J. Broadbent, and others.

September 21

44 Rectal Fistula. F. C. Wallis.
45 Early Diagnosis of Subacute Combined Degeneration of the Spinal Cord. E. F. Buzzard.
46 Diagnosis and Differential Diagnosis of the Pathologic Processes Causing Enlargement of the Kidney. C. G. Cumston, Boston.

Indian Medical Gazette, Calcutta

September

47 *Ipecacuanha Treatment of Acute Hepatitis. H. W. Pilgrim.
48 Id.—F. J. Drury.
49 Id.—J. T. Calvert.
50 Id.—A. H. Nott.
51 Effect of Ipecacuanha on the Leukocyte Curve in Amebic Hepatitis. E. D. W. Greig.
52 Report for 1909 of Medical College Hospital, Calcutta. F. J. Drury.

47. **Ipecacuanha Treatment of Acute Hepatitis.**—The treatment of the acute hepatitis preceeding the formation of liver abscess is described by Pilgrim as follows: When not associated with loose stools and the bowels are inclined to be costive, a mild mercurial purge is first given; otherwise the ipecacuanha treatment is begun on the evening of admission or diagnosis of the disease. It is necessary that the patient should have nothing to eat or drink for at least two hours before or after the giving of ipecacuanha. Twenty minutes before taking the ipecacuanha, Pilgrim gives 20 grains of chloral, and then in average cases he gives 25 grains of ipecacuanha. In severe cases in which the full influence of the drug is immediately required, he gives 30 grains for the first 3 or 4 nights, after that reducing it to 25 and 20 grains gradually. He has occasionally given 40 grains, but he believes that this is seldom necessary, and the cases treated by him have responded very favorably to 30-grain doses and less. As a rule he finds one dose daily suffices, but in severe cases he does not hesitate to give it night and morning, and also in cases not apparently severe, but in which the leukocytosis does not rapidly reduce. The ipecacuanha is given in keratine capsules, 5 grains in each; given in capsules both the nausea and vomiting are greatly reduced. Many patients do not vomit at all, but only suffer for a short time from nausea, while some few are absolutely free from any unpleasant or abnormal sensation; it is all a question of whether the capsule breaks or comes undone before it has passed through the pylorus. After swallowing the ipecac. the patient is enjoined to lie absolutely still in bed, when under the influence of chloral, he usually soon drops to sleep, and if he wakes up 2 or 3 hours later, feeling uncomfortable, the drug will at all events have largely exerted its influence. Pilgrim thinks it a mistake to put on mustard plasters or other local applications to the stomach, which only attract attention to that organ and interfere with the drowsy feeling which begins to steal over the patient ending soon in sleep. The daily dose of ipecac. is continued till the leukocytosis falls to 10,000 or less, and the temperature has become normal, and the pain or discomfort in the region of the liver has gone, this latter being among the first symptoms that disappear under this treatment. Then the ipecac. is continued for another week in daily doses of 20 grains, for by this time even in cases in which the drug has proved obnoxious, toleration is usually established, and the patient seeing the result obtained is seldom refractory. Other important accessories, such as diet and rest are very carefully arranged for. At the end of about two weeks such patients are allowed up, and after a few days are sent away cured for a change, and urgently advised never to touch alcohol in any form, no matter how moderately, so long as they have to reside in India.

Annales de Médecine et Chirurgie Infantiles, Paris

September 1, XIV, No. 17, pp. 521-548

53 Case of Epidemic Poliomyelitis Commencing with Meningitis. (Réaction méningée intense au début d'un cas de paralysie spinale infantile.) P. H. Haushalter.
54 *Diabetes in Children. P. Maurel.
55 *Radiotherapy of Suppurating and Fistulous Glands. F. Barjon.

54. **Diabetes in Children.**—Maurel found that the diabetes in his child patients generally assumed the form of the severe pancreatic diabetes of adults. He thinks that children will be found to have diabetes much more commonly than is generally supposed if it is sought for more systematically. The disease usually develops insidiously until the rapid falling off in weight, the polydipsia and polyuria attract attention. Arrived at this stage, the disease runs a rapidly fatal course as a rule; the younger the child the more rapid the course. Infants with this disease should be given a teaspoonful of Vichy water with each meal; older children should be dieted like adult diabetics—measuring the amount of urine every day and weighing the child every three or four days, limiting him to milk in case of accidents, in other respects following the principles of treatment of adults, with possibly a course of saline and arsenical mineral waters.

55. **Radiotherapy of Glandular Lesions.**—Barjon found that radiotherapy gave good results in treatment of inflammatory glandular lesions, and he has recently been applying it in suppurative processes in glands and their complications, and the results have surpassed his anticipations. He describes his experiences with 56 patients. With closed lesions a minute puncture followed by radiotherapy gave perfect cosmetic results. Radiotherapy is most effectual, he states, after the suppuration has ceased under the influence of repeated punctures. If the suppurative process has opened a way outward the cosmetic results naturally are not so good, but even then they surpass those obtained by other measures. In one case suppurating glands in the inguinal region had been removed some time before but the wounds had not healed and they suppurated anew, until there were six large ulcerations extending down on the thigh and around on the buttocks and showing no tendency to heal. Four days after the first application of radiotherapy a turn for the better was apparent, and after the sixth sitting, in as many weeks, healing was complete, the new skin being thin and supple.

Presse Médicale, Paris

September 7, XVIII, No. 72, pp. 673-680

56 Intra-Intestinal Hemorrhage after Wounds of the Intestine. M. Guibé.

September 10, No. 73, pp. 681-688

57 *Prophylaxis of Compressed-Air Disease. (Réglementation du travail dans l'air comprimé.) J. P. Langlois.
58 "Staff" for Use in Orthopedic Appliances. (De l'emploi du staff en orthopédie pour le moulage des crêtes et des aspérités du squelette.) L. Mencière.

September 14, No. 74, pp. 689-696

59 Mechanism of Cammidge Reaction. (A quoi est due la réaction de Cammidge?) L. Grimbert and R. Bernier.
60 *Absence of Pause between Expiration and Inspiration. (La respiration continue.) R. Pla y Armengol.

57. **Prophylaxis of Compressed-Air Disease.**—Langlois discusses the bases for international regulation, remarking that the French law may serve as a model. One of the provisions

of this law insists on safeguards for workmen coming out of the compressed-air chamber so that if they should become dizzy there is no chance for a dangerous fall. The public authorities also post in the pay office a placard warning the workmen that it is imprudent to stay for more than 8 out of the 24 hours in air at a pressure of 2 kg. (8.8 pounds); 7 hours, of 2.5; 6 hours, of 3; 5 hours, of 3 or 3.5, and 4 hours, of 3.5 and 4. The law further insists on ventilation to insure that the proportion of carbon dioxid does not surpass 1 per thousand.

60. **Continuous Respiration.**—Pla y Armengol has encountered this peculiarity of the respiration only in patients with tuberculous infiltration of the lungs during the first stage of infection. There is no pause between expiration and inspiration; they follow close on each other so that respiration is continuous.

Semaine Médicale, Paris

September 21, XXX, No. 38, pp. 445-456

61 Metamorphosis of Neoplasms. F. de Quervain.
62 Pseudocongestion of the Lungs from Pushing Up of the Diaphragm from Below. M. Roch and G. Fulpius.
63 The Present Status of Stroganoff's Prophylactic Method of Treating Eclampsia. R. de Bovis.

Archiv für klinische Chirurgie, Berlin

XCIII, No. 1, pp. 1-291. Last indexed October 8, p. 1328

64 Treatment of Diffuse Peritonitis. J. Rotter
65 Behavior of Striated Muscle after Myoplastic Operations. (Verhalten quergestreifter Musculatur nach myoplastichen Operation.) A. v. Mutach.
66 *Treatment of Tuberculous Coxitis. G. Neuber.
67 Experimental and Clinical Experiences with Plastic Operations on the Dura. (Duraplastik.) G. F. v. Saar.
68 *Ileocecal Tuberculosis. M. M. Eschenbach.
69 *Puncture of the Brain for Diagnosis and Treatment. (Beitrag zur diagnostischen und therapeutischen Hirnpunction nach Neisser-Pollack.) F. Hesse.
70 Persistence of the Thymus with Exophthalmic Goiter. (Zur Frage der Thymuspersistenz bei Morbus Basedowii.) H. Gebele.
71 Fate of Living Bones Transplanted into Soft Parts. (Schicksal lebender Knochen, die in Weichtheile transplantirt worden sind.) W. Pokotilo.
72 *Collective Inquiry in Regard to Spinal Anesthesia during 1909. (Sammelforschung über die Lumbalanästhesia im Jahre 1909.) F. Hohmeier and F. König.
73 Peritonitis from Perforation of the Gall-Bladder. (Experimentelle Untersuchung zur Gallenblasenperforationsperitonitis.) W. Noetzel.
74 Permanent Success of Experimental Plastic Operations on Bones. (Dauererfolge der Osteoplastik im Thierversuch.) P. Frangenheim.
75 Experimental Suture of the Aorta. (Experimenteller Beitrag zur Aortennaht.) N. Guleke.
76 Experimental Study of Action of Trypsin on the Vessels. (Beitrag zur Wirkung des Trypsins auf die Gefässe.) F. Rosenbach, Jr.
77 Apparatus for General Anesthesia with Differential Pressure. (Apparat zur Ueberdrucknarkose.) F. Lotsch.

66. **Treatment of Tuberculous Hip-Joint Disease.**—Neuber advocates earlier application of operative measures, before extensive caries has developed and in all cases when caries is under way if the general health permits and severe lesions of internal organs are not evident. He gives an illustrated description of the technic which he has found gives best results in his experience at Kiel. The ultimate favorable position of the joint depends mostly on the energy, perseverance and care of the patient, himself, after the operation, and Neuber keeps him under supervision for several years to encourage and influence him in this direction. Neuber seeks to avoid the use of complicated walking apparatus as it prevents the functional strengthening of the muscles which is such an important factor in the final outcome. He incises from the front, severing the sartorius and rectus femoris, which permits ample access to the joint and inguinal glands and revision of the wound without moving the patient. The final result is that the patient can sit comfortably, move his limb actively sideways, bend it and twist it a little; the shortening is counteracted by the dropping of the pelvis. The gait with a cane is approximately normal; without it there is a slight limp.

68. **Ileocecal Tuberculosis.**—The great difficulty in treatment is that the affection is not differentiated until so late that extensive operations are necessary. Eschenbach has had 27 cases in his service, it being thus shown to be the most frequent of all tuberculous abdominal affections with the exception of peritonitis. Fourteen of the patients survived the operation and the first few months afterward, and with the exception of a tendency to hernia in a few the 11 patients recently examined were free from all disturbances. In 4 cases 3 and 4 years have elapsed since and the patients are in the best of health although the operation was very extensive.

69. **Puncture of the Brain and Lumbar Puncture for Intracranial Hemorrhage.**—In the case reported by Hesse the patient was still unconscious two hours after a fall on the head; breathing was stertorous, pulse 64, and a small hematoma was evident in the right orbit and temple. Within the next half hour the pulse dropped to 48 and the patient seemed moribund. A Neisser-Pollack puncture was then made back of the right Krönlein point and 8 or 10 c.c. of black blood released. The breathing ceased to be stertorous at once and the pulse increased to 68; the condition improved rapidly to such an extent that osteoplastic trephining became possible; 35 c.c. of blood were evacuated from the hematoma, and recovery was soon complete. Punctures in another case revealed multiple hematomas, the patient improving wonderfully while 70 c.c. of fluid was being evacuated from the right posterior Krönlein point, opening his eyes and asking questions during the operation. This was the third puncture.

72. **The Balance Sheet to Date of Spinal Anesthesia.**—Hohmeier and König have examined the records of 2,400 cases in which spinal anesthesia was applied in 41 well-known institutions, and they state that the idea that this is a harmless procedure will have to be abandoned. There are 12 fatalities for which it seems to have been directly responsible. The list includes 4 cases of death from paralysis of the respiration center; in 7 of the fatal cases the patients were over 70, but one patient was only 32. In rather a large proportion of cases the patients years after seem to suffer to an unusual extent from paresthesias, neuralgia, weakness, headache or vertigo, suggesting possibly a tardy effect of the spinal anesthesia. They urge physicians and surgeons to re-examine now anew patients to whom the spinal anesthesia technic was applied at any time. This may reveal an unexpectedly large number of cases of late injuries of the central nervous system from the spinal anesthesia years before. Their conclusions are that the method should be reserved for the exceptional cases.

Berliner klinische Wochenschrift

September 12, XLVII, No. 37, pp. 1693-1732

78 *Theory to Explain Beneficial Action of Oatmeal in Diabetes. (Zur Theorie der Hafermehlkur beim Diabetes.) M. Klotz.
79 Ehrlich's "606" in Syphilis. (110 Fälle von Syphilis, behandelt nach Ehrlich-Hata.) L. Michaelis.
80 Technic for Injection of Ehrlich's "606." (Eine bequeme, schmerzlose Methode der Ehrlich-Hata-Injektion.) E. Kromayer.
81 Arrow Poison in East Africa. (Das Pfeilgift der Watindigas.) M. Krause.
82 Fracture of Twelfth Rib with Severe Neuralgia of Its Nerve. (Rippenbruch mit Intercostalneuralgie.) A. Most.
83 Severe Chronic Spasm of the Colon. (Ein eigenartiges Symptomenbild der Hysterie.) R. Schütz.
84 Case of Huge Sarcoma of the Pleura with Calcification, Secondary to Sarcoma of the Tibia. F. Grabow. Commenced in No. 35.
85 *Early Symptoms and Serotherapy of Tetanus. K. Evler. Commenced in No. 35.
86 The Problems and Achievements of Recent Research in Zoology. O. Kuttner.

78. **Explanation of Action of Oatmeal in Diabetes.**—Klotz has found, he states, that wheat flour becomes transformed to sugar and the transformation stops there, while oatmeal is transformed a step further and is assimilated as an aglycogenic, anhepatic carbohydrate, and has thus an antiacetonuric action.

85. **Early Symptoms of Tetanus.**—Evler bases his study of the early symptoms of tetanus and the effects of serotherapy on thirteen cases, one in his own person. The feature of the early symptoms, he states, is that they appear transiently and are slight at first. Sometimes there are only traces of symptoms which the patient does not think of connecting with his often slight and rapidly healing lesion. A day or so after the infection there may be restlessness, sleeplessness, distressing dreams, difficulty in urination and more frequent impulses, oppression in the chest, violent headache, drawn features,

nosebleed, sweating, fatigue, excessive yawning, vertigo, darting pains at various points and chilliness. Sometimes the local disturbances are more prominent; swelling of the injured limb, notwithstanding the limb is raised, is suspicious of tetanus; it feels hot but is not red, and the local arterial pressure is unduly high. There may be occasional local pains and in a day or so the lymph cords show red and the region is very tender. Single groups of muscles may be tonically contracted and cannot be voluntarily relaxed; the contraction at first causes no pain but merely hinders moving the limb a little. Contracture and tremor may be observed in the injured limb, sometimes clonic twitching, but they are not painful and do not attract the patient's attention; more and more muscles gradually become involved and fibrillary movements may be evident at times. If the wound is on the hand, on grasping the forearm twitchings in the different flexor tendons may be felt, and the fingers tremble and twitch. One of the first signs, the third day, is a persisting pain after the involuntary contractions of the muscles induced by effort; nothing is to be seen at the spot at first but later the muscles contract to form a painful lump which disappears after a time but returns anew if the part is touched again. The lymph glands were swollen in several of his cases, the inguinal glands in some resembling the findings with syphilis. In one case the ulnar gland was so swollen and painful that it was excised under local anesthesia. Vertigo is an especially important early sign; it is often so severe that this is what first brings the patient to the physician. Ocular symptoms are also important, and there may be a spasmodic cough. The pulse is generally tense, slow and full. The hearing at first may be unusually acute but later there is more or less deafness. Speech is slow, probably from disturbances in the cortex and tongue. The benefits of serotherapy are apparent from the detailed history of his patients and of his own case. He was infected in operating on one of the patients and early symptoms developed within 24 hours, but he continued his practice for 9 days notwithstanding he presented nearly all the symptoms enumerated above. Serotherapy was commenced on the fifth day. Nutrient enemas became necessary on the seventeenth and the following day but by the nineteenth day the teeth could be opened a little and recovery then progressed although insomnia and headache persisted for some time and the gait was stumbling for weeks. Chilliness and occasional sharp pains were noted for months with muscular twitchings. Two of the 12 patients died. In one of the fatal cases no portal of entry for the germs could be discovered.

Correspondenz-Blatt für Schweizer Aerzte, Basel

September 10, XL, No. 26, pp. 817-848

87 Case of Neuroparalytic Keratitis. A. Dutoit.

September 20, No. 27, pp. 849-880

88 *Public Hygiene and Infectious Diseases. W. Kolle.

88. **Public Hygiene and Infectious Diseases.**—Kolle's historical and critical review of this subject concludes with the remark that the infectious diseases have nothing to do with the evolution of the species by survival of the fittest, as those best equipped for the struggle for existence, both physically and mentally, are the very ones who are carried off by the infectious diseases. The aim should be, he reiterates, to impress on every citizen, high and low alike, the duty of being healthy as a patriotic duty he owes his country. Prophylactic hygiene, he added, is not merely an index of the degree of external civilization to which a state has attained, it is also an index of the internal culture, and nothing can compare with it as a factor for culture in general. He delivered the address at the recent dedication of the Institute for Infectious Diseases at Berne.

Deutsche medizinische Wochenschrift, Berlin

September 15, XXXVI, No. 37, pp. 1689-1736

89 *Cosmetic Medicine and Surgery. (Ueber Kosmetik.) H. Paschkis.
90 Reinjections of Ehrlich's "606" in Syphilis. (Reinjektionen von Dioxy-diamidoarsenobenzol.) Wechselmann.
91 Ehrlich's "606" in Syphilitic Eye Disease. (Arsenobenzol gegen syphilitische Augenleiden.) E. v. Grosz.
92 Mercury Atoxylate in Syphilis. (Ueber die angebliche Brauchbarkeit des atoxylsauren Quecksilbers zur Behandlung der menschlichen Syphilis.) R. Bergrath.
93 Influence of the Depressor Nerve on the Work of the Heart and Elasticity of the Aorta. (Einfluss des Depressors auf die Herzarbeit und Aortenelastizität.) O. Bruns and J. Genner.
94 *Differential Diagnosis between Multiple Sclerosis and Compression of the Spinal Cord. M. Nonne.
95 Diagnosis and Treatment of Duodenal Ulcer. F. Mendel.
96 Congenital Deformity of the Vertebræ as Cause of Curvature of the Spine. (Ueber angeborene Wirbelanomalien als Ursache von Rückgratsverkrümmungen.) G. Joachimsthal.
97 Etiology of Goiter. (Zur Frage der Kropfätiologie.) E. Bircher.
98 Foreign Bodies in the Esophagus. (Fremdkörper in der Speiseröhre.) L. W. Pernice.
99 Leprosy. P. H. Gerber.
100 The Wassermann Test Not Yet Adapted for Office Work. (Die Wassermannsche Reaktion in der Sprechstunde.) L. Münz.
101 *Text of Application for Patent on Ehrlich's "606."

89. **Cosmetics.**—Paschkis urges physicians to pay greater attention to the correction of minor disfigurements and advising patients how to attain the aspect of well-groomed health. He states that he was the first, years ago, to urge physicians to study this branch of medicine from the scientific and active standpoint instead of leaving it to manicurists, masseurs, hairdressers and quacks. Much of this belongs to the dermatologist and internist, and for practitioners to treat the whole subject of "beauty doctoring" as beneath their dignity he regards as a great mistake for a number of reasons.

94. **Differential Diagnosis of Multiple Sclerosis and Compression of the Spinal Cord.**—Nonne gives the details of six cases to show that it is sometimes impossible to differentiate these conditions during life. One of his cases was remarkable in that the supposed tumor compressing the spinal cord was not found at the exploratory laminectomy which, however, was followed by subsidence of all the symptoms and during the five years since the young man, a gardener, has been in good health. The atypical forms of multiple sclerosis, and the atypical course of tumors compressing the cord explain the difficulties encountered.

101. An editorial on this subject appeared in THE JOURNAL, October 1, page 1204.

Fortschritte der Medizin, Leipsic

September 1, XXVIII, No. 35, pp. 1089-1120

102 Changes in the Upper Air Passages during Pregnancy and the Puerperium. (Veränderungen der oberen Luftwege in Schwangerschaft, Geburt und Wochenbett.) R. Imhofer.
103 Tuberculosis in Shop Clerks. (Tuberkulose bei Handlungsgehilfen.) G. Zickgraf.

Medizinische Klinik, Berlin

September 18, VI, No. 38, pp. 1471-1518

104 *Attack of Gout in the Eye. (Ueber okuläre Gichtanfälle.) E. Krückmann.
105 *Retention of Bromin after Administration of Bromids and the Influence on it of Intake of Salt. A. Ellinger and Y. Kotake.
106 *Local Immunization of the Portals of Entry for Infection. (Lokale Immunisierung der Eingangspforten von Infektionen.) H. Lippmann.
107 Autolysis and Metabolism. (Autolyse und Stoffwechsel.) E. Laqueur.
108 Psychic Disturbances of Korsakow Type after Attempted Strangling. (Psychische Störungen nach Strangulation.) E. Meyer.
109 Rare Complications of Cholelithiasis. O. Samter.
110 Pulsating Varices with Tricuspid Insufficiency. G. Joachim.
111 Effects of Passive Congestion of the Heart. (Ueber das Stauungsherz.) M. Lissauer.
112 Polycythemia and Softening of the Brain. (Polyzythaemie und Hirnerweichung.) K. Goldstein.
113 *Recurrence of Carcinoma of the Uterus after the Fifth Year. (Spätrezidive des Uteruskarzinoms.) M. Semon.
114 Acute Lymphemia. W. Carl.
115 Question Blank Symposium on Ehrlich's "606." Commenced in No. 37.
116 Forensic Importance of Hemochromogen and its Crystals. G. Puppe and W. Kürbitz.
117 Artificial Production of Vocal Sounds. (Ueber künstliche Erzeugung von Sprachlauten.) O. Weiss.

104. **Gout in the Eyes.**—Krückmann states that he has encountered six cases in which attacks of gout occurred in the eyes. The acute pain came on suddenly during the night; the conjunctiva and eyelids became swollen, red and angry with extremely severe sharp pain, aggravated by the slightest touch or movement of the head. In some cases the disproportion was striking between the insignificant changes in the interior of the eye and the intensity of the external symptoms. Notwithstanding the stormy onset, the whole attack passes over, leaving scarcely a trace; even functional disturbances are rare afterward. Opacity of the vitreous body occurs and persists only when there are pre-existing

changes in the eye and the gout attack is particularly severe. In the first three of his cases the attack in a single eye was the first manifestation of the constitutional gout, and its true nature was not confirmed by other manifestations of the gout until several months later when a typical attack in the great toe cleared up the diagnosis. One such patient still has an occasional attack of gout but the eyes have never been affected since. The prompt improvement under colchicum is another argument in favor of the gouty nature of the attacks in all the cases. It is possible, he remarks, that many forms of headache are due to an attack of gout involving the dura mater just as the sclerotic was involved in his cases. In one of his patients the attack developed the third night after an operation for cataract and was exceptionally severe while complete restoration followed. This suggests an explanation for many postoperative eye disturbances, such as iridocyclitis, which subside without leaving a trace. In another case a traumatic iritis was evidently the seat of a typical attack of gout for which it provided a predisposition. In one case the gout seemed to be due to deposits of lime rather than of urates; the patient had ankylosis of the vertebræ and of some of the joints and radioscopy showed deposits of lime in one foot.

105. **Crowding Out of Bromids by Chlorids in the Tissues.**—The research reported seems to confirm the fact that the bromids are crowded out of the tissues by the chlorids. Retention of salt from insufficiency of the kidneys may affect the utilization of bromids, as also the changes from an intercurrent disease. In treatment it is important to know whether deficiency of salt or the specific action of the bromids is the main factor in the effect of treatment or in the intoxication.

106. **Local Immunization of the Portals of Entry for Infections.**—Lippmann's research seems to open further horizons for effectual immunization, the results indicating that it is possible to develop a local immunity in the mucosa lining of the alimentary canal so that it will be immune to infection by this route. This was realized in his experiments even when the animals were as susceptible as the controls to infection by other routes. The effect is like that observed with the colon bacillus; this causes no disturbances in the alimentary canal, but brought in contact with the bladder mucosa, it is liable to set up at once a lively cystitis. He experimented with 77 mice and with botulin toxin, introduced into the stomach of the mouse through a ureter catheter, the tip being first softened in the Bunsen flame to prevent injury as it was introduced through the cardia. In the few cases in which the mucosa was injured, the toxin acted as if given by the subcutaneous route, the mice all dying within 24 hours. The mice were immunized with 13 doses of the toxin, given at five-day intervals, the amounts ranging from 0.03 to 0.16 gm. After this the animals bore without injury ingestion of a dose of 0.5 gm. of the toxin while 0.000025 gm. by the subcutaneous route proved promptly fatal. The facts observed throw light on the experiences with immunization against typhoid, cholera and anthrax. Notwithstanding a general immunity realized from the immunization procedures, evidenced by the attenuation of the disease in the vaccinated, the intestinal mucosa seems to be as susceptible in them as in the non-immunized.

Among the 424 soldiers contracting typhoid in the African troops in 1905 were 100 who had been vaccinated against typhoid, but the disease ran an exceptionally mild course in them. On the other hand, Lippmann continues, an attack of typhoid modifies the intestinal mucosa in such a way that the individuals thereafter can ingest highly virulent typhoid germs without contracting the disease. When the cells have once learned to make antibodies, they react afterward to the slightest specific stimulus in this line, and even to the non-specific, with vigorous production of antibodies. A person immunized against typhoid, dysentery or cholera would probably react to either of these germs with antibody production which would render the germs harmless even if they lingered in the intestinal tract as in healthy bacillus-carriers. It may be possible, he adds, that this same principle of artificial local immunization might be applied to prevent further spread of an infectious process already installed. Leber has succeeded in curing an experimental serpiginous ulcer by subconjunctival injection of pneumococcus aggressins, while the process in the other, untreated eye showed no tendency to heal. There are also clinical experiences on record demonstrating a curative influence on furunculosis and impetigo contagiosa and colon inflammation of the bladder from local applications of the antigens.

113. **Recurrence of Uterine Carcinoma After Five Years.**—Semon insists that women who have been operated on for uterine cancer should be kept under supervision even longer that 5 years as he has observed recurrence later than this. In one case the woman of 53 returned for examination as ordered for 6 years after vaginal hysterectomy for carcinoma of the cervix. All was found in good order at these regular examinations but 4 years later there were pains in the pelvis and leucorrhea, and finally a little blood escaped from the vagina. Examination two days later showed extensive hard infiltration around the vagina and a polypous growth in the depths of the vagina which proved carcinomatous. In another case the recurrence developed 5 years after total vaginal hysterectomy. The operation was done on account of a hemorrhagic myoma, but when the uterus was examined afterward a small carcinoma was found in the body of the organ, concealed entirely by the myoma close to it. He has found very few cases on record of recurrence of carcinoma of the body of the uterus; in his case the recurrence had the aspect of inoculation of the scar in the vagina, and yet the external os had been sutured together when the uterus was being removed. This case warns anew of the possibility of coincidence of carcinoma of the body of the uterus with submucous myoma; it may escape discovery even with careful palpation and microscopic examination of scrapings. If the operation consists merely of myomectomy, the interior of the uterus should be examined again carefully afterward for traces of cancer.

Monatsschrift für Geburtshülfe und Gynäkologie, Berlin

September, XXXII, No. 3, pp. 241-384

118 History of the International Gynecology Congresses. (Der V. internationale Kongress für Geburtshülfe und Gynäkologie.) A. Martin.
119 *Present Status of Placenta Prævia. (Kritische Beurteilung der gegenwärtigen Ansichten über Placenta praevia.) L. Gussakow.
120 Suction Apparatus in Treatment of Puerperal Endometritis. (Über Saugebehandlung der puerperalen Endometritis.) A. Sitzenfrey.
121 Lecithin Bouillon for Determining Virulence of Streptococci. R. Franz.
122 *Clinical Study of Retroversion of the Uterus. L. Adler.
123 Suture of the Levator Ani Muscles as Typical Operation for Prolapse of the Uterus. W. Latzko.
124 Etiologic Treatment of Prolapse of Genital Organs. J. Schiffmann and R. Ekler.
125 Primary and Permanent Results of Operations for Perineum Tears. (Resultate bei kompleten Dammriss-Operationen.) K. F. Schaback.

119. **Present Status of Management of Placenta Prævia.**—Gussakow concludes from a comparative study of the recent literature on this subject and his own experience with 25 cases of total, and 112 of partial placenta prævia, that everything tending to induce contraction of the uterus should be avoided if the membranes are still intact. He also believes that tamponing is not effectual in arresting hemorrhage while it invites infection. Puncturing the membranes frequently checks the hemorrhage with partial placenta prævia; if this does not succeed, he advises introducing the inflatable bag inside the membranes. This latter procedure is gentler and he believes that it guarantees better the birth of a living child than does the Braxton-Hicks version. With total placenta prævia, he advises boring through the placenta rather than attempting to separate it. Care is necessary to prevent air embolism; no negative pressure must be permitted in the abdominal-pelvic vessels and the air in the birth canal must not be exposed to any increased pressure. In all such statistics he urges listing separately the cases of partial and total placenta prævia and the mortality separate with each. In his 137 cases, 6 per cent. of the women with total and 1.7 per cent. of those with the partial died, and 50 per cent. of these 8 deaths were due to air embolism, 12.5 per cent. to

infection, while only 37.5 per cent. succumbed to anemia. The prognosis with presenting total placenta prævia is very grave and Cesarean section is justified, he says, in case the woman wishes a living child at any price.

122. **Treatment of Uterine Retroflexion.**—Adler relates that at Schauta's clinic in Vienna no attempt is made to correct retroflexion unless it causes disturbances, and he states that displacement alone is not able to cause menstrual irregularity. Even during the first months of pregnancy the displacement is corrected only if it is impossible to keep the woman under control and if it is causing much disturbance. If the woman complains of trouble ascribable to the displacement, gentle attempts are made to correct it, avoiding instrumental aids, except a pessary if this is able to hold the uterus in its normal position. Schauta disapproves of pessaries except as a transient means of relief; if operative measures are necessary he gives the Doléris technic the preference. In case of fixed retrodisplacement he has frequently found that conservative measures put an end to the disturbances, leaving the displacement uncorrected. The patients return once a year or so for a few weeks of massage which frees them again from all disturbances for another long period.

Münchener medizinische Wochenschrift

September 13, LVII, No. 37, pp. 1921-1976

126 *Operative Mobilization of Stiff Joints. (Operative Mobilisierung ankylosierter Gelenke.) E. Payr.
127 *Acute and Chronic Streptococcus Sepsis and its Relation to Acute Articular Rheumatism. H. Steinert.
128 Functional Tests of the Vagus Innervation of the Heart. H. E. Hering.
129 No Modification of Wassermann Reaction by Modern Medication. W. Schwartz and P. Flemming.
130 Phenol and Camphor as Prototypes of the Symptomatic Acting Antipyretics. E. Harnack.
131 Physiologic Standardizing of Drugs. (Physiologische Wertbestimmung von Drogen, speziell der Folia Digitalis.) W. Straub.
132 *Simple Method for Eosinophil Count and Its Practical Value. (Einfache Methode der Zählung der eosinophilen Leukozyten und der praktische Wert dieser Untersuchung.) R. Dunger.
133 *Causal Relations between Syphilis and Idiocy. E. L. Brückner.
134 *Course and Outcome of Chronic Strumitis. B. Riedel.
135 Biologic Action of Roentgen Rays. R. Werner.
136 *Resuscitation by Ventilation of the Air Passages. (Wiederbelebung durch Ventilation der Luftwege per vias naturales.) F. Kuhn.
137 *Impressions of a Psychiatrist on a Trip Around the World. S. Lilienstein.

126. **Operative Mobilization of Ankylosed Joints.**—Payr gives an illustrated description of the methods that have given him satisfactory results in 9 out of 30 cases of ankylosis of various joints. The main factors for success are precision in diagnosis, and in determining the indications, with technic improving with experience both in the operations and in the after-care. Especially instructive is his study of the cases in which the outcome of his measures was unsatisfactory.

127. **Streptococcus Sepsis and its Relation to Acute Articular Rheumatism.**—Steinert reports eleven cases of acute or chronic streptococcus sepsis, beginning with an insidious course or with sudden embolism of an artery in the Sylvian fossa or slight diarrhea, or the syndrome may suggest an old valvular defect. In other cases pains in the joints were the first symptom; in one case pain in one hip was the only sign of trouble for months, until finally a slight occasional rise in temperature was noted. In other cases there was a long period of vague general disturbances. The syndrome at first did not seem at all grave but death was the invariable outcome, from cardiac insufficiency or embolism or from cachexia. Various strains of streptococcus are able to induce this syndrome; the sepsis assumes an acute form as a rule, but in those who have had acute articular rheumatism at any time the sepsis develops in a milder, more chronic form. This suggests that acute articular rheumatism is a streptococcus disease and modifies the reaction to later streptococcus invasion. It also explains Litten's "chronic, malignant, rheumatic, non-septic form of endocarditis" as a specific, chronic, malignant sepsis and endocarditis lenta occurring probably only in those who have had acute rheumatism in the past. Four of Steinert's patients were young women and the streptococcus sepsis ran an acute fatal course. Another patient was a robust man. A recent endocarditis was the principal feature of the syndrome in all, with severe ulceration in the eight cases that came to necropsy. (Schottmüller's description of endocarditis lenta was summarized in these columns, May 14, 1910, page 1658.)

128. **Testing the Functioning of the Heart Vagus.**—Hering first describes the action of the vagus on the heart in checking the frequency of the heart beat and conduction and rendering the contractions weaker. Then he reviews the various tests for estimating the energy of its action in one or all of these directions, commenting on the acceleration of the heart beat during a deep inspiration and the retarded heart beat during apnea, the Czermak test by pressure on the vagus and Dehio's atropin test, and the interpretation and clinical importance of their findings.

132. **Improved Technic for the Leukocyte Count.**—Dunger describes a simple technic for determination of the eosinophils. The blood is mixed in the pipette in the proportion of 10 to 1 with a mixture of 10 parts each of acetone and of a 1 per cent. aqueous solution of eosin with distilled water to 100 parts. This keeps well and shows up the eosinophils prominently.

133. **Causal Relation of Syphilis to Idiocy.**—Brückner found 16 among the 216 idiots in the institution in his charge who presented stigmata of syphilis or a positive Wassermann reaction, and he thinks that there is probably a causal connection with syphilis in a still larger proportion. On the least suspicion of idiocy the general practitioner should apply the Wassermann test to the child and its parents. Better still would it be, he adds, to make compulsory the Wassermann test of the blood from the umbilical cord at birth. This would reveal the taint in time and would enable successful prophylaxis of abnormal conditions leading to idiocy later.

134. **Course and Outcome of Chronic Strumitis.**—Riedel has encountered 3 cases of chronic strumitis among 1,064 cases of benign goiter in which he has operated. One of the patients has been under observation for 15 years. Silatschek not long ago added another to the 7 previously on record, and his patient spontaneously recovered. This possibility of spontaneous retrogression may explain the rarity of the condition. In case conditions progress to threaten suffocation, excision of a wedge-shaped piece out of the isthmus is the most rational treatment and is generally followed by spontaneous retrogression of the rest of the thyroid. A typical case is given in detail; a young man with a subacute swelling of the thyroid, which was of stony hardness, was threatened with suffocation, but there was no fever. After wedge excision the rest of the gland gradually subsided to normal size and there have been no further disturbances. The microscope showed an accumulation of young connective tissue between the normal elements of the gland, crowding the latter out, and there was a mild endarteritis as with many chronic inflammatory processes.

136. **Resuscitation by Artificial Ventilation of the Air Passages.**—Kuhn hails Meltzer's work in intratracheal insufflation as a great advance; it supplements admirably, he declares, his own work along the line of intubation for inhalation anesthesia, resuscitation, etc. Practical resuscitation should include the use of oxygen or a bellows or large rubber bulb to pump in air. A peroral intubation tube, two-way tube or two single tubes and a longer tube like a catheter should also be on hand. The life-saver should clear the mouth from water, mucus, etc., and then introduce the thinnest tube deep into the larynx, and permit oxygen to flow through it continuously until the arrival of the physician, aiding the ventilation of the lungs by rhythmic compression of the chest as by the ordinary measures for artificial respiration. If the physician is on the spot or when he arrives, he should introduce the two-way tube and continue the inflow of oxygen through the finer catheter tube passed through the other. Whether and when the peroral tube is indicated it is for the physician to determine; the finer tube alone may answer all purposes. If there is no oxygen on hand, a large rubber bulb may be

used to pump common air into the trachea with this same technic through the tube. The patient is benefited by these simple measures and obtains more air than by the use of the oxygen tank with a mask. The mechanical measures for respiration must be kept up continuously according to the usual technic. Kuhn believes that his spiral peroral two-current tube has the advantage over a catheter tube that it does not interfere with the outflow of air as the patient rouses and commences to breathe. He declares that oxygen has no advantage over good fresh air for resuscitation purposes, but the oxygen tank gives a more even and controllable flow. Too little attention hitherto has been paid to the necessity for prompt evacuation of the carbon dioxid in resuscitation of the apparently drowned and others. A two-current tube with air or oxygen forced into the larynx from a tank or ordinary air blown in by a bellows or by a large rubber bulb answers both requirements of introduction of air and escape of waste products. All that the life-saver need have on hand therefore is the two-way tube, the fine catheter tube and the oxygen tank or bellows or bulb.

137. **Impressions of a Psychiatrist on a Trip Around the World.**—Lilienstein describes his impressions of a trip from one insane asylum to another around the world. At the Cairo asylum, alcoholism could be incriminated in the etiology of only 6 among the 425 Mohammedan inmates, but pellagra was responsible for the psychosis in 65 and hasheesh intoxication for 72 among 572 cases. The smoking of hemp, *Cannabis indica* or hasheech, is the vise of the lower classes throughout the Orient and helps to fill the insane asylums. In Ceylon the asylum was more in the nature of a prison, as also in some of the older of the five asylums in Australia. The distances that have to be traversed sometimes to bring the insane to the asylums in Australia are so great that the acute psychoses, curable under other conditions, become confirmed and incurable during the long trip to the asylum. He speaks with admiration of the asylum at Sydney, which is managed on the most enlightened principles and where all the discharged are kept under constant supervision; they or their family or guardian have to sign a contract to return for medical inspection every week or fortnight; if they fail they are promptly fined or otherwise punished or the former patients have to return to the institution. Lilienstein regards this as a most admirable provision. At singapore he saw a peculiar form of psychosis. Epidemic convulsions and retrograde amnesia are its main features; it affects mostly middle-aged women from a certain district. Hysteria and psychic infection may be excluded. The separate attacks last from one to three days. In China neither the state nor the community takes any heed of the sick and least of all of the insane, outside the sphere of the work of the missions. In Japan, the asylums and clinics resemble eastern European models; alcoholism is rare, as also opium and hemp smokers' psychoses. The constant tea drinking in Japan does not seem to lead to nervous disturbances. Lilienstein comments on the resemblance of the coolies to each other; it was impossible even for a trained neurologist like himself to tell them apart. [A traveler in California recently said that the coolie workers there are paid "a certain wage and find themselves, but they are all so exactly alike that the hardest part of their work must be for each to find himself."] Lilienstein remarks that one would expect a very exalted grade of asylum in America after leaving the Japanese institutions, but one is disappointed in that respect. They have no special features. He refers to the Bicêtre hospital at Paris as the most interesting collection, Queen's Hospital for Paralyzed and Epileptics at London as the best neurologic clinic, that is, where the most careful diagnoses are made and treatment individualized, but nowhere, he says, were conditions all around so satisfactory as in Germany.

Therapie der Gegenwart, Berlin

September, LI, No. 9, pp. 385-432

138 Principles of Psychotherapy. P. Dubois.
139 *Insufflation of Air in Treatment of Pleurisy with Effusion. (Behandlung der serösen Pleuritis mit Lufteinblasung.) J. H. Geselschap.
140 *Digitalis in Treatment of Spontaneous Epistaxis. (Entstehung des spontanen Nasenblutens und seine Behandlung mit Digitalis.) C. E Fecke
141 *Ehrlich's "606" in Syphilis. (Ehrlichs Syphilisheilmittel bei einigen Fällen innerer Lues.) Meidner.
142 *Idem. (Ueber die Ehrlichsche Syphilisbehandlung.) W. Fischer.
143 *Hot Baths in Whooping-Cough. (Heisse Bäder bei Keuchhusten.) T. Schrohe.

139. **Insufflation of Air in Pleurisy with Effusion.**—According to the experiences at the Groningen medical clinic, air is as effectual as oxygen or nitrogen for therapeutic injection into the pleural cavity unless it is necessary to apply protracted compression to the lung; in this case the less absorbable nitrogen is preferable. In pleurisy with effusion the main points are to introduce the drain so as to empty the pleural cavity completely, and to allow the air to take the place of the effusion as it is drained away, thus preventing any sudden changes in the mechanical conditions in the thorax. The relief is immediate and great; the air being so much lighter than the effusion or other fluid in the pleural cavity, the diaphragm is not so weighted down. Some think that the air may prevent further effusion by the compression it exerts on the vessels in the pleura, but it is more likely that as the air is gradually absorbed the resulting negative pressure in the chest favors absorption rather than effusion of fluids. The only objection to this method of treatment is the possible liability to eclampsia of the pleura; this may be induced by the mere introduction of the cannula and is as liable to follow introduction of a drain or exploratory puncture. Extreme care is necessary on this account with all these measures.

140. **Digitalis to Arrest Tendency to Spontaneous Epistaxis.**—Focke has given digitalis for this purpose in 84 cases and it proved successful except in a hemophiliac and in a woman given to excessive coffee drinking and tight lacing. In 75 per cent. of the patients the tendency to nosebleed was promptly and permanently arrested within 24 hours after taking the digitalis, even in a few cases in which the bleeding was due to some anatomic anomaly, correction of which later permanently arrested the tendency to epistaxis. He adds that digitalis formerly was a common remedy for a tendency to hemorrhages but it was abandoned towards the close of the last century for theoretical reasons which have since been shown to be erroneous.

141. **Ehrlich's "606" in Syphilis.**—Meidner has treated 34 patients with the "606" and reports the details of some of the cases. He found the remedy effectual in curing syphilitic lesions on the skin and mucosa; with internal lesions it proved as effectual as a prolonged mercury and iodid course. Tabes and paralysis were not materially influenced, the only trace of effect being on disturbances in the ocular muscles and on the ataxia.

142. **Idem.**—Fischer reviews the entire list of publications on the subject; nearly all have been reviewed in these columns as they have appeared. The recurrences that have been observed show that a definite cure is not realized by the drug. Fischer states that his conclusions as to its efficacy are that it ranks just above calomel, one injection of the "606" accomplishing what it takes two injections of calomel to accomplish. Certain patients refractory to calomel seem to be favorably influenced by the "606." On the other hand, he says, syphilitic affections of the nervous system, on which calomel has a favorable action, respond well to the "606" in some cases, while in others it seems to have no influence or an unfavorable one. Frequently, papulous early syphilides seemed to respond more favorably to calomel than to the '606." On the whole, he states, one may count on obtaining with two or three injections of calomel equally good results, occasionally even better and sometimes not so good. To this he adds that calomel in small doses is much less harmful for the nervous system than the new drug. No syphilologist would think of such a thing as submitting all his syphilitic patients, responding normally to mercury, to a course of calomel. He would reserve the calomel, and this is what Fischer advises for the "606," for the rare cases of syphilis in which mercury and iodid fail. Only critical testing of its value for years to come will finally determine its rank in therapeutics. Already the tendency is noticeable, he says, to

increase the dosage; and this, as well as repeating the doses, exposes to dangers which impose the greatest caution. Fischer is assistant in the skin diseases service at the Virchow hospital at Berlin.

143. **Hot Baths in Whooping Cough.**—Schrohe has always witnessed great relief follow a hot bath given toward evening. The water should be about 99 F. and the child should stay in the bath for from 10 to 15 minutes, the head being kept cool with a cold water compress. The children sleep well after it, and the number and severity of the paroxysms seem much diminished. He has noticed that the skin of children with pertussis is pale and cool, indicating contraction of the vessels in the skin; the hot bath counteracts this, and thus relieves the internal organs, promotes elimination of toxins and soothes the nervous system and the tendency to the paroxysms.

Wiener klinische Wochenschrift, Vienna

September 15, XXIII, No. 37, pp. 1307-1334

144 Spirochetes Uninfluenced by Mercury or Arsenic. (Ueber Quecksilberfestigkeit der Syphilisspirochäten nebst Bemerkungen zur Therapie mit "Ehrlich-Hata 606.") M. Oppenheim.
145 Tubercle Bacilli in the Blood. (Vorkommen von Tuberkelbazillen im zirkulierenden Blut.) S. Aes-Nagy.
146 Operative Cure of a Perforated Duodenal Ulcer. J. Gobiet.
147 Industrial Morbidity and Mortality in Leipsic and Vienna. (Berufliche Morbidität und Mortalität in Leipzig und Wien.) S. Rosenfeld.

Zeitschrift für Urologie, Berlin

September, IV, No. 9, pp. 641-728

148 The Supporting Tissue of the Kidneys. (Zur Kenntnis des Stützgewebes der Nieren.) R. Kölster.
149 Operations for Diffuse Cancer of the Penis. (Operationen beim diffusen Krebs des männlichen Gliedes.) R. N. Cholzoff.
150 Determination of Urease and its Clinical Importance. (Ueber Ureasebestimmungen und ihre klinische Verwertung.) F. Simon and E. Meyer.

Zentralblatt für Chirurgie, Leipsic

September 17, XXXVII, No. 38, pp. 1249-1280

151 Access to the Anterior Mediastinum by Transverse Resection of the Sternum. (Oeffnung des Mediastinum vermittels querer Brustbeindurchtrennung.) P. L. Friedrich.
152 *Semicircular Clamp for Removing Hemorrhoids. (Neues Verfahren zur radikalen Beseitigung der Hämorrhoiden.) W. Schaack.

152. **Hemorrhoid Clamps.**—Schaack's clamp forms a semicircle when closed around the base of the hemorrhoids; two clamps are used, thus forming a complete circle around the previously dilated anus. The projecting tops of the hemorrhoids are then cut or burnt off, and a few sutures taken through the base under the clamps. The anus is then packed with gauze around a large drain; the clamps are removed and there is nothing left of the hemorrhoids except a linear wound encircling the anus. Not a drop of blood is lost with this technic, while the hemorrhoids are radically removed and the rectum is drained without danger of infecting the wound. As the cicatrix is outside the sphincter and sound mucosa extends inward from it, there is no danger of stricture later. The curving clamp is illustrated.

Zentralblatt für Gynäkologie, Leipsic

September 17, XXXIV, No. 38, pp. 1233-1256

153 *Actinomycotic Parametritis. O. Bondy.
154 Technic for Draining the Abdominal Cavity. (Bauchhöhlendrainage.) J. Fabricius.

153. **Actinomycotic Parametritis.**—Bondy reports a case of parametritis in an unmarried woman of 28, a factory worker. The actinomycosis involved the ovaries and tubes on both sides and encroached on the connective tissue in the pelvis. As the health continued to decline under weeks of ordinary conservative treatment, the adnexa were removed. The fever subsided at once but the cachexia was too far advanced and the patient soon succumbed. On account of the possibility of radical cure under appropriate iodid treatment in time, the discovery of extensive, very tough parametritis, especially when there is a tendency to perforation toward the abdominal walls, should warn of the necessity for bacteriologic examination of the pus and histologic examination of the granulation tissue which can generally be readily obtained from the abdominal walls. The prognosis depends on this being done in time so that proper treatment can be instituted.

Gazzetta degli Ospedali e delle Cliniche, Milan

September 6, XXXI, No. 107, pp. 1129-1136

155 *Intubation for Small Foreign Bodies in Air Passages of Young Children. M. Gioseffi.

September 8, No. 108, pp. 1137-1144

156 Curability of Tuberculous Meningitis. I. Celeste.

September 11, No. 109, pp. 1145-1160

157 Biology of Embryonal and Neoplastic Tissues. G. Fischera.

September 13, No. 110, pp. 1161-1168

158 Seroprophylaxis of Tetanus. (Nota a proposito delle iniezioni di antitossina nel trattamento preventivo contro il tetano.) C. Viscontini.

155. **Intubation for Foreign Body in the Throat.**—Gioseffi reports three cases of infants suffocating from a foreign body in the throat. Attempts to relieve the suffocation and to remove the foreign article by intubation all failed. Intubation has no chance of succeeding unless the foreign body is extremely small and free or only loosely lodged in the air passage, but Bokay and others have reported a few cases in which the child was saved by this means.

Policlinico, Rome

September 11, XVII, No. 37, pp. 1155-1186

159 Concrement and Suppuration in Submaxillary Gland. (Pioscialolitiasi della sottomascellare.) O. Cignozzi.

Riforma Medica, Naples

September 12, XXV, No. 37, pp. 1009-1036

160 Functional and Organic Stomach Disease. (Gastropatie dinamiche ed organiche.) G. Rummo.
161 Experiences with Local Anesthesia for Major Operations. C. Mainoli.

Books Received

Books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

A TEXT-BOOK OF BOTANY AND PHARMACOGNOSY. Intended for the Use of Students of Pharmacy, as a Reference Book for Pharmacists and as a Handbook for Food and Drug Analysts. By Henry Kraemer, Ph.D., Professor of Botany and Pharmacognosy, and Director of the Microscopical Laboratory, in the Philadelphia College of Pharmacy. Fourth Edition. Cloth. Price, $5 net. Pp. 888, with 2,000 illustrations. Philadelphia: J. B. Lippincott Co. (1910).

HANDBOOK OF REGIONAL ANATOMY. By Francis C. Ford, M.D., Professor of Anatomy, Head of Department of Anatomy and Senior Demonstrator of Anatomy in the Hahnemann Medical College and Hospital, Chicago. Cloth. Price, $1.50 net. Pp. 193. Chicago: Francis C. Ford, 1910.

TOBACCO AND ITS DELETERIOUS EFFECTS. A Book for Everybody, Both Users and Non-Users. By Charles E. Slocum, M.D., Member of Local, Ohio State, and the American Medical Associations. Cloth. Price, $1. Pp. 70. Toledo: The Slocum Publishing Co., 1909.

THE TAXONOMIC VALUE OF THE MICROSCOPIC STRUCTURE OF THE STIGMAL PLATES IN THE TICK GENUS DERMACENTOR. By C. Wardell Stiles. Hyg. Lab. Bull. 62, August, 1910. Paper. Pp. 72, with 134 illustrations. Washington: Government Printing Office, 1910.

OBSTETRICAL NURSING, FOR NURSES AND STUDENTS. By Henry E. Tuley, M.D., Professor of Obstetrics, Medical Department, University of Louisville. Cloth. Price, $1.50. Pp. 246, with 72 illustrations. Louisville: John P. Morton & Co., 1910.

HISTORY OF CHEMISTRY. By Edward Thorpe, F.R.S., Author of "Essays in Historical Chemistry," etc. Two Volumes. Vol. II, from 1850 to 1910. Cloth. Price, 75 cents. Pp. 202, with 180 illustrations. New York: G. P. Putnam's Sons, 1910.

THE CAUSE AND CURE OF COLDS. By William S. Sadler, M.D., Professor of Physiologic Therapeutics, the Post-Graduate Medical School of Chicago. Cloth. Price, $1 net. Pp. 147, with illustrations. Chicago: A. C. McClurg & Co., 1910.

THE STORY OF THE BACTERIA AND THEIR RELATIONS TO HEALTH AND DISEASE. By T. Mitchell Prudden, M.D. Second Edition. Cloth. Price, 75 cents. Pp. 232, with illustrations. New York: G. P. Putnam's Sons, 1910.

DUST AND ITS DANGERS. By T. Mitchell Prudden, M.D., Author of "The Story of the Bacteria," etc. Second Edition. Cloth. Price, 75 cents. Pp. 113, with 6 illustrations. New York: G. P. Putnam's Sons, 1910.

REPORT OF THE THIRTY-SECOND ANNUAL MEETING OF THE AMERICAN BAR ASSOCIATION. Held at Detroit, Aug. 24-27, 1909. Cloth. Pp. 1188. G. Whitelock, 1407 Continental Trust Bldg., Baltimore.

WORLD CORPORATION. By King C. Gillette, Discoverer of the Principles and Inventor of the System of World Corporation. Cloth. Price, $1. Pp. 240. Boston: New England News Co. (1910).

HYPNOTISM AND SUGGESTION IN DAILY LIFE, EDUCATION AND MEDICAL PRACTICE. By Bernard Hollander, M.D. Cloth. Price, $1.75. Pp. 295. New York: G. P. Putnam's Sons, 1910.

PROCEEDINGS OF PENNSYLVANIA PHARMACEUTICAL ASSOCIATION. Thirty-Third Annual Meeting. [Edgar F. Heffner, Lock Haven.] Held at Buena Vista Springs, June 28-30, 1910. Paper. Pp. 416.